Defining the flexicurity index in application to European countries

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Abstract

The notion of *flexicurity* was introduced in the 1990s to promote a better job security and social security of atypically employed (other than permanent full-time). The given paper suggests an operational definition of flexicurity which implies the corresponding flexicurity index. For analytical purposes two other indices, the Norm-security of 'normally', i.e. permanent full-time, employed and the All-security of all, i.e. both 'normally' and atypically employed, are defined.

The indices are derived from qualitative juridical data. For this purpose, employment groups in different countries are ranked with respect to five partial criteria: the eligibility to public pensions, to unemployment insurance, etc. Due to the specificity of criteria, the ranking is generally possible and is not that confusing as the task of numerical evaluation.

A dedicated mathematical proposition estimates the error in the index which results from 'ordinal rounding' of the input variables comparing to using the 'exact' variable values. Thus even if the 'exact' (latent) variables are not known then the rank-scaled input is sufficient to approximate the index which otherwise could not be obtained at all.

The index is calculated for 16 European countries for the years 1990–2003.

Keywords: Flexicurity, employment security, social security, employment protection legislation, fringe benefits, European Union, statistical indices.

JEL Classification:
C43 — Index Numbers and Aggregation
C51 — Model Construction and Estimation
J21 — Labor Force and Employment, Size, and Structure
J26 — Retirement; Retirement Policies
J65 — Unemployment Insurance; Severance Pay; Plant Closings
J83 — Workers' Rights
J88 — Public Policy

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Chapter 1

Introduction

Measure what is measurable, and make measurable what is not so.

Galileo (1564–1642)

The general employment insecurity has significantly increased in Europe in the recent decade. In addition to unemployment, the number of atypically employed, like part-time, fixed-term, or self-employed, has disproportionately grown since the 1980s (EuroStat 2003). The atypical employment is not only less secured but also provides less carrier prospects and training chances (OECD 2002, p. 156–159). Besides, it often disqualifies workers from social benefits, since the eligibility of atypically employed is substantially lower than that of permanently employed (OECD 2002, p. 131). The growth of atypical employment can be explained by several factors.

1. **Rapid technological changes.** Expanding information technologies are often implemented within relatively short-time projects. Some projects are realized by small temporary teams with a limited longevity and even by single individuals. These particularities and dynamics are transmitted to all branches which use information technologies and depend on their updates. Thus, the share of temporary employment in the total employment in France, Italy, Netherlands, and Spain doubled or tripled during 1985–2000, attaining in Spain 35% (OECD 2002, p. 133). The annual growth of self-employment in the non-agricultural sector in the OECD counties in 1990–1998 was 1.7%, whereas that of civilian employment 1% (OECD 2000, p. 159).

2. **Globalization.** Investments under globalization are easily made worldwide, industries and services move from one country to another, making permanent employment restrictive for efficient economic performance. The market economy became total, imposing economic priorities over social ones. The collapse of the Socialist Block gave way to unconstrained capitalism. The employment protection legislation became more relaxed, resulting in a number of negative effects on labour market and social structure (OECD 1999, Chapter 2).

3. **Long-term unemployment.** During the 1990s the long-term unemployment in the OECD has become a more serious problem then before. In 1990 the unemployed for 6–12 months and for more than 12 months constituted respectively 44.6 and 30.9% of all unemployed. In 1998 these figures attained 48.6 and 33.4% (OECD 2002, p. 322). This means that the average duration of unemployment has increased.

At the same time, the workers having experienced a long-time unemployment "are more likely to be offered shorter contracts than other workers" (OECD 2002, p. 156).

4. **Immigration.** As stated by the OECD (2001, p. 171), "While admissions of new permanent foreign workers are currently very few in number, especially in the European OECD countries, the temporary employment of foreigners appear to be becoming more widespread. ... The temporary employment of foreign workers introduces flexibility into the labour market." Moreover, foreigners are overrepresented among long-term unemployed (OECD 2001, p. 181–182) whose chances to get a 'normal' permanent job are relatively low (OECD 2002, p. 156).

5. **High welfare.** Finally, high earnings and accumulated welfare in some European countries enabled a fraction of the population to turn to part-time jobs. For instance, the demand for part-time employment by full-time employed in the Netherlands is twice larger than vice versa. For women this ratio is even higher and surpasses three times (OECD 1999, p. 33).

As a reaction to the growing flexibility of employment on the one hand, and decreasing employment security and social security on the other hand, in the 1990s the notion of *flexicurity* has been introduced to promote a better security of atypically employed (WSI 2000, Klammer and Tillmann 2001a). The notion emerged first in the Netherlands and Denmark whose renown social security system is recognized as a "good-practice example" (Braun 2001, van Oorschot 2001). Although some authors still consider the flexicurity a specific Dutch/Danish phenomenon (Gorter 2000), the idea spread all over Europe in a few years.

Since the notion is rather new, there are neither established definition of flexicurity, nor means of its quantitative characterization. One definition was suggested by Wilthagen (2001, p. 1) which was taken by Klammer and Tillmann (2001b, p. 16) as a reference:

Definition 1 *Flexicurity ... [is] ... a policy strategy that attempts, synchronically and in a coordinated way, to enhance the flexibility of labour markets, the work organization and labour relations on the one hand, and to enhance security — employment security and social security — notably for weak groups in and outside the labour market on the other hand.*

In the given paper we attempt to characterize the flexicurity with a quantitative index. According to Definition 1, the flexicurity is a *strategy*, which is difficult to express numerically. For operational purposes, the flexicurity can be alternatively defined in a less broad sense, as a particular type of security, which degree can be measured:

Definition 2 *Flexicurity is the employment and social security of atypically employed, that is, other than permanent full-time.*

The level of security can be estimated for each homogeneous employment category: permanent part-time, fixed-term full-time, self-employed, etc. Then its weighted average, with respect to the size of the employment groups, can be regarded as the *Flexicurity* index; the capitalization distinguishes the index from the notion. (The measurement of

some aspects of employment security has already been attempted by the OECD (1999, Chapter 2); we elaborate this idea further.)

For analytic comparisons, we analogously define the *Norm-security* of 'normally' (permanent full-time) employed, and the *All-security* of all employed, with the corresponding indices.

To be specific, let us illustrate these definitions with a simple example.

Example 1 (Flexicurity index) Suppose that the total employment falls into three categories, one of 'normally' employed, and two of atypically employed. Let they differ in the level of employment security and of social security, as shown in the table below:

	Employment type		
	Permanent full-time	Permanent part-time	Fixed-term full-time
Size of the group, in % to total employment	50	30	20
Level of employment and social security, Score in %			
Employment security	95	90	30
Social security (fringe benefits)	85	70	70
Total security, score reduced to %	90	80	50
	Normally employed	Atypically (= flexiby) employed	
	All employed		

Then the Norm-security, Flexicurity, and All-security are, respectively,

$$\begin{aligned} N &= 90\% \\ F &= \frac{30 \cdot 80 + 20 \cdot 50}{30 + 20}\% = 68\% \\ A &= \frac{50 \cdot 90 + 30 \cdot 80 + 20 \cdot 50}{50 + 30 + 20}\% = 79\% \ . \end{aligned}$$

If shares of employment categories and their levels of security change in time then we obtain three dynamical indices.

What follows is just an elaboration of this idea:

- We consider eight employment categories instead of three.
- The employment and social security is characterized by six criteria instead of two.
- The security criteria are weighted: More important criteria get more weight.
- We consider 16 European countries for the years 1990–2003.

Thus, the indices operate on the following 4-dimensional structure:

$$8 \text{ employment categories} \times 6 \text{ juridical criteria} \times 16 \text{ countries} \times 14 \text{ years} = 10752 \text{ data} \ .$$

The bottle-neck is estimating the level of employment security and the level of social security. The scores of the employment security (= employment protection legislation) in different countries is taken from the OECD (1999, p. 66). For this purpose, the OECD has defined an index based on several measurable factors: the norms of notice periods (in weeks) and severance pay (in monthly wages) for individual and collective dismissals, compensation pay (in monthly wages) and related provisions following unjustified dismissals, the number and duration (in months) of allowed successive temporary contracts, and some others.

As for the social security, the information is available only in a qualitative juridical form (OECD, 2002, p. 146–148). Converting such information into metrical scores is hardly reliable. In the given paper we overcome this difficulty by ranking employment groups in different countries with respect to five partial criteria: the eligibility to public pensions, to unemployment insurance, to paid sick leave, to paid maternity leave, and to paid holidays. Due to the specificity of criteria, the ranking is generally possible and is not that confusing as the task of metrical (numerical) evaluation.

The next step is justified by a dedicated mathematical proposition which backs up the use of ranks instead of continuous variables in a complex index. The proposition provides an estimate of the error in the index which results from such 'ordinal rounding' of the input variables comparing to using the 'exact' variable values. Thus even if the 'exact' (latent) variables are not known then the rank-scaled input is sufficient to approximate the index which otherwise could not be obtained at all.

To make the motivation clearer, the model is introduced from the results. Then we go in some details, and finish with methodological foundations and mathematical arguments.

Chapter 2, "Results", describes the model output.

Chapter 3, "Estimation", is devoted to constructing the scores of employment security and of social security.

Chapter 4, "Methodology", contains a mathematical proposition backs up deriving metrical indices from qualitative data.

Chapter 5, "Conclusions", summarizes the paper and outlines the main properties of the indices introduced.

The Appendix contains some additional tables and figures.

It should be emphasized that the paper presents an approach rather than a final result. To make reliable conclusions, the security should be estimated from more detailed juridical data.

Chapter 2

Results

2.1 The model output

All tables and figures of this paper are produced by a computational model. It is implemented in the C++-based MATLAB computer environment, Version 6, Release 13. The program outputs eps-files of figures, LaTeX text files of tables and a LaTeX head file which calls the figures and tables. After having run the MATLAB program it suffices to run the LaTeX head file to obtain the complete set of tables and figures as they appear in this paper.

The set contains the following items:

- A general 'Europe'-table with the three yearly indices for the 16 countries. The table is coupled with a figure which displays 48 curves.
- 16 country tables with details on constructing the three indices for the given country. Each country table is coupled with a figure which visualizes this information.
- Six security-criteria tables with specifications, how the given criterion is fulfilled. Each table contains juridical data and rankings of the eight employment categories in the 16 countries.
- Index-accuracy table with error estimations for the three indices for 16 countries.

2.2 The Flexicurity index of European countries

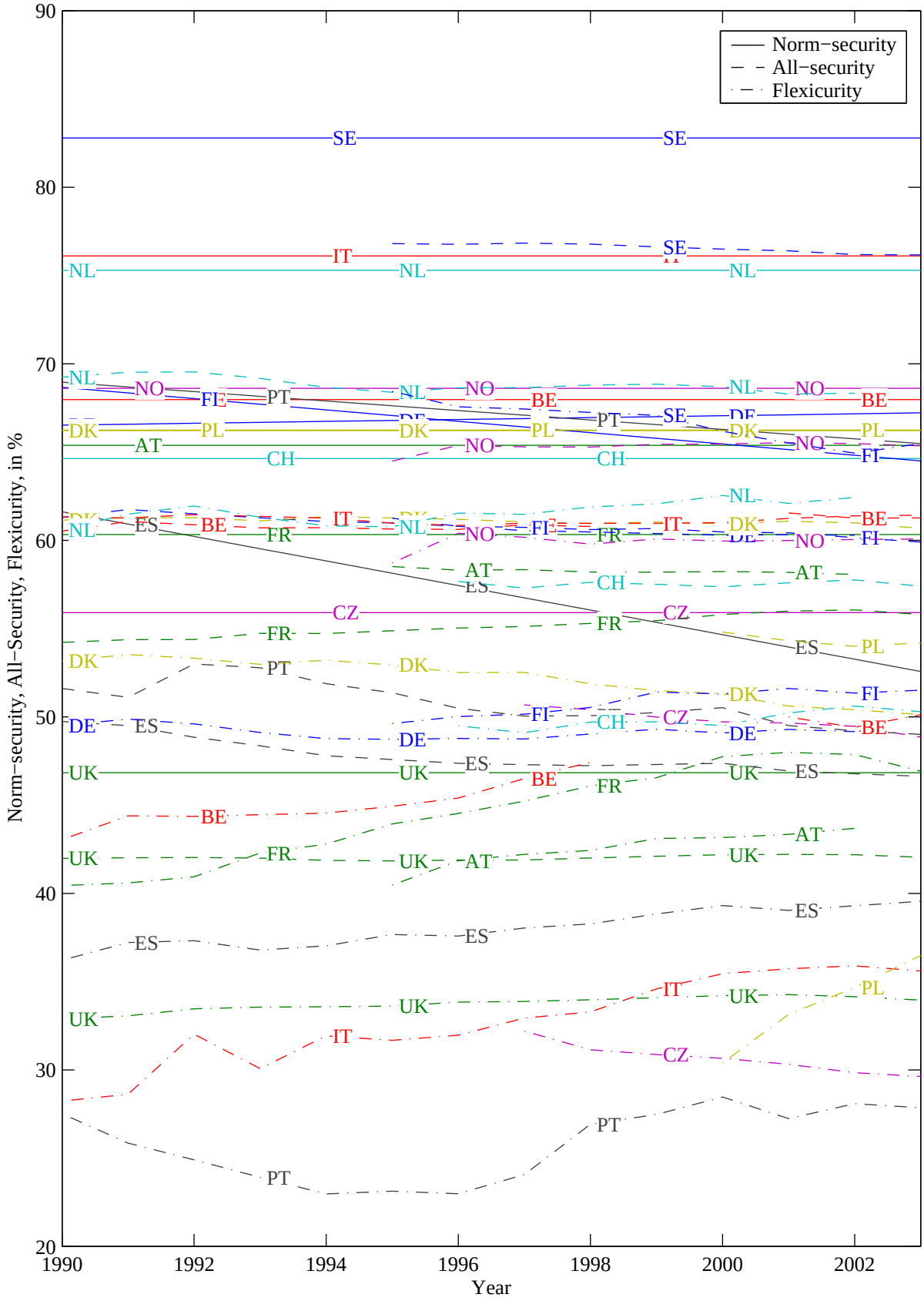
The summary Table 2.1 is coupled with Figure 2.1. Each cell of Table 2.1 contains three numbers arranged in a vertical triple with the Norm-security (top), All-security (middle), and Flexicurity (bottom) for the given country for the given year. Blanks mean the non-availability of the corresponding data.

The last column provides the country ranks with respect to each index for the year 2002, the last one with complete data on all the countries considered. The highest indices (all with rank 1) are attained by Sweden. Then go the Netherlands with ranks 3,2,2. Denmark and Germany are ranked moderately, with (8,6,6) and (6,7,8), respectively. The worst places occupy the United Kingdom (with ranks 16,16,14), Portugal (with ranks 9,14,16), Spain (15,15,11), and Czech Republic (14,13,15).

Table 2.1:
Norm-security, in %
All-Security, in % for selected countries (model estimation)
Flexicurity, in %

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Ranks
DE	66.5	66.6	66.6	66.7	66.7	66.8	66.8	66.9	66.9	67.0	67.1	67.1	67.2	67.2	6
Germany	61.3	61.7	61.5	61.3	61.1	61.0	60.8	60.5	60.5	60.4	60.3	60.3	60.3		7
	49.5	49.9	49.6	49.1	48.8	48.7	48.8	48.7	49.0	49.3	49.1	49.3	49.2		8
AT	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	10
Austria						58.5	58.3	58.3	58.2	58.2	58.2	58.2	58.1		9
						40.5	41.8	42.2	42.4	43.1	43.2	43.3	43.7		10
BE	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	68.0	5
Belgium	60.5	61.1	60.9	60.7	60.7	60.6	60.6	60.9	60.8			61.5	61.3	61.3	5
	43.0	44.4	44.4	44.5	44.5	44.9	45.4	46.5	47.4			50.0	49.4	50.1	7
CH	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	64.6	12
Switzerland							57.7	57.3	57.6	57.5	57.4	57.6	57.8	57.4	10
							49.5	49.1	49.7	49.7	49.5	50.2	50.6	50.3	5
CZ	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	55.9	14
Czech Republic								50.7	50.4	50.0	49.7	49.6	49.5	48.9	13
								32.2	31.1	30.9	30.7	30.3	29.8	29.6	15
DK	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	8
Danemark	61.1	61.3	61.3	61.1	61.3	61.3	61.2	61.0	60.9	61.0	60.9	61.1	61.0	60.7	6
	53.2	53.5	53.3	53.0	53.2	52.9	52.5	52.5	51.9	51.5	51.3	50.6	50.4	50.1	6
ES	61.6	60.9	60.2	59.5	58.8	58.1	57.4	56.7	56.0	55.3	54.7	54.0	53.3	52.6	15
Spain	49.7	49.5	48.8	48.4	47.8	47.6	47.4	47.3	47.2	47.3	47.4	46.9	46.8	46.6	15
	36.2	37.2	37.3	36.8	37.0	37.7	37.6	38.0	38.3	38.8	39.3	39.0	39.3	39.5	11
FI	68.7	68.3	68.0	67.7	67.4	67.1	66.7	66.4	66.1	65.8	65.5	65.1	64.8	64.5	11
Finland						61.2	60.8	60.7	60.6	60.7	60.5	60.4	60.2	59.9	8
						49.6	50.0	50.1	50.5	51.4	51.3	51.6	51.3	51.5	4
FR	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3	13
France	54.2	54.4	54.4	54.7	54.7	54.9	55.0	55.1	55.3	55.4	55.8	56.0	56.1	55.8	11
	40.4	40.6	40.9	42.3	42.8	43.9	44.5	45.2	46.1	46.6	47.7	48.0	47.9	46.9	9
IT	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	76.1	2
Italy	61.3	61.3	61.5	61.4	61.3	61.0	60.8	61.0	61.0	61.0	61.0	61.2	61.4	61.4	4
	28.2	28.6	32.0	30.1	31.9	31.7	32.0	32.9	33.3	34.6	35.4	35.7	35.9	35.6	12
NL	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	75.3	3
Netherlands	69.2	69.5	69.5	69.2	68.7	68.4	68.6	68.7	68.8	68.8	68.7	68.3	68.3		2
	60.6	61.5	61.9	61.3	60.8	60.8	61.5	61.5	61.9	62.1	62.5	62.1	62.4		2
NO	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	4
Norway						64.5	65.4	65.3	65.3	65.4	65.5	65.5	65.5	65.4	3
						58.7	60.4	60.2	59.8	60.1	60.0	60.0	60.0	60.1	3
PL	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	66.2	7
Poland											54.8	54.3	54.0	54.2	12
											30.4	33.1	34.7	36.5	13
PT	69.0	68.7	68.4	68.2	67.9	67.6	67.4	67.1	66.8	66.5	66.3	66.0	65.7	65.5	9
Portugal	51.6	51.1	53.0	52.8	51.9	51.4	50.5	50.0	50.1	50.2	50.5	49.5	49.2	49.0	14
	27.5	25.9	24.9	23.9	23.0	23.1	23.0	24.1	26.9	27.5	28.5	27.2	28.1	27.9	16
SE	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	82.8	1
Sweden						76.8	76.8	76.8	76.8	76.6	76.5	76.4	76.2	76.2	1
						68.4	67.6	67.4	67.2	67.1	66.2	65.5	64.9	65.5	1
UK	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	46.8	16
United	42.0	42.0	42.0	42.0	41.9	41.8	41.9	41.9	42.0	42.1	42.2	42.2	42.2	42.0	16
Kingdom	32.9	33.1	33.5	33.6	33.6	33.6	33.8	33.9	34.0	34.1	34.2	34.3	34.1	34.0	14

Figure 2.1: Norm-security, all-Security, and flexicurity for selected countries (model estimation)



Portugal, the highest All-security by Sweden, and the highest Flexicurity by the Netherlands.

Figure 2.1 visualizes the development of the three indices for all the 16 countries by 48 curves. The country's three curves, Norm-security, All-security, and Flexicurity, are always located in the descending order. Indeed, the normally employed are most secured, and flexibly employed are least secured. Since the All-security is the weighted average of the Norm-security and the Flexicurity, the corresponding curve goes in between.

The relative location of the curves and the character of their variation have the following meaning; see Figure 2.2:

The country's three curves are close to each other. This possibility is realized if normally and atypically employed have close levels of security. (Norway, Netherlands, Sweden, Denmark, Germany, Switzerland, United Kingdom.)

The country's three curves are distant from each other. In this case both normal and atypically employed are numerous, but the latter are discriminated, that is, are little secured comparing to the normally employed. (Portugal, Poland, Italy.)

The Norm-security curve goes far beyond the other two which are close. This possibility is realized if the atypically employed dominate in number and are discriminated (not occurred in the observations).

The Flexicurity curve goes far below the other two which are close. It means that the atypically employed constitute an insignificant minority which is discriminated. (Czech Republic, Austria, Belgium.)

An index curve has a leap. It is an indication at a radical change in the employment protection laws. Theoretically it may be also caused by an abrupt change in the proportion between the employment categories. (Portugal, Italy.)

An index curve ascends or descends gradually. Such a behavior reflects a gradual evolution of the proportion between the employment categories. (Spain, France, Belgium.)

The Norm-security increases. It means tightening the employment protection legislation for normal employment. (Germany.)

The Norm-security decreases. It means a relaxation of the employment protection legislation for normal employment. (Spain, Finland, Portugal.)

The Flexicurity increases. It usually indicates at a decreasing relative share of self-employed (who are least secured) in the total share of atypically employed. For instance, if some permanent full-time jobs are replaced by part-time and/or fix-term jobs then the total number of atypically employed increases. Although the number of self-employed remains the same, their share in the atypical employment decreases. (Italy, Poland, Belgium, Austria.)

The second possible cause is tightening the employment protection legislation for flexibly employed. (France.)

Figure 2.2: Norm-security, All-security and Flexicurity of 16 countries

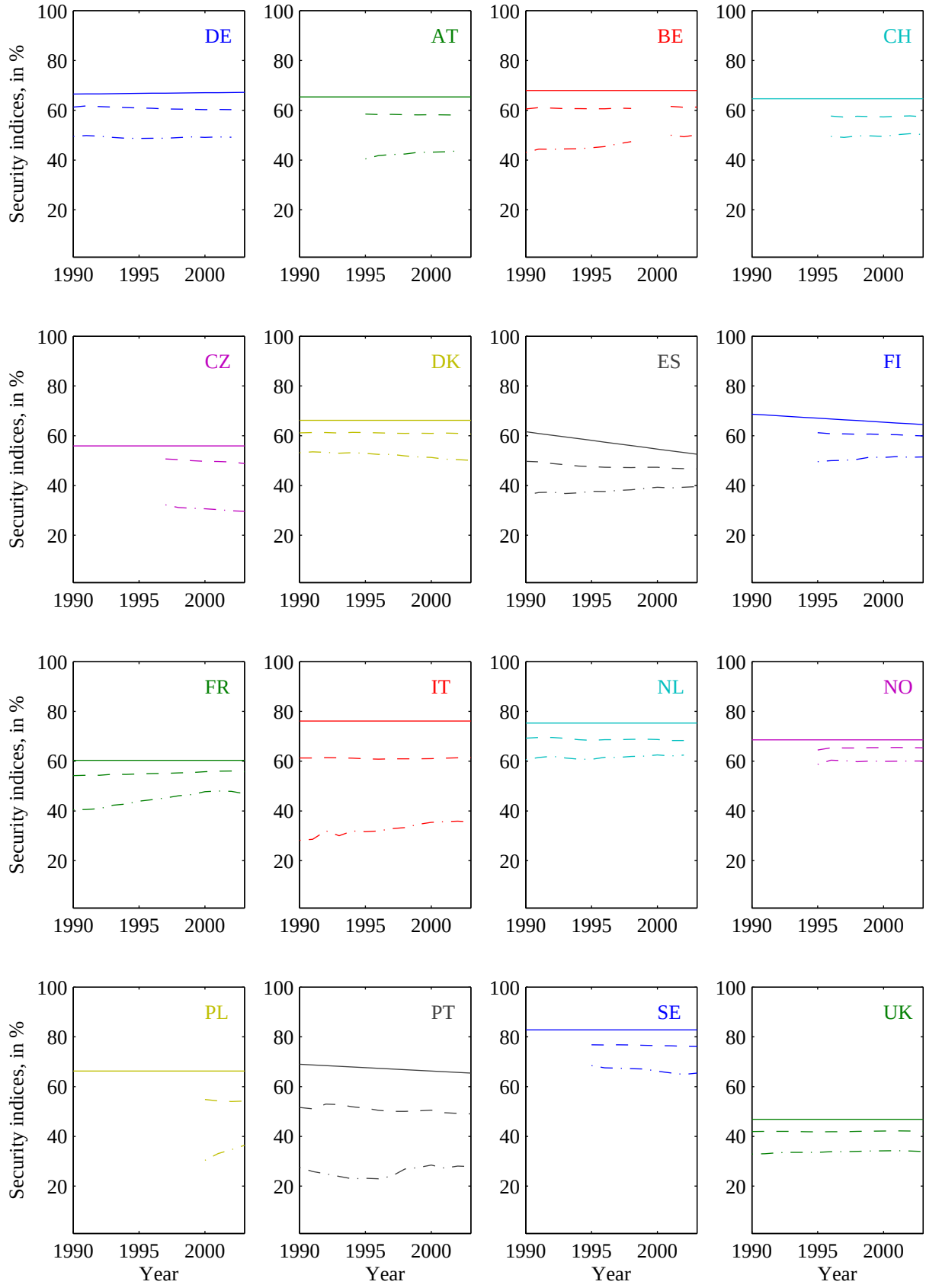
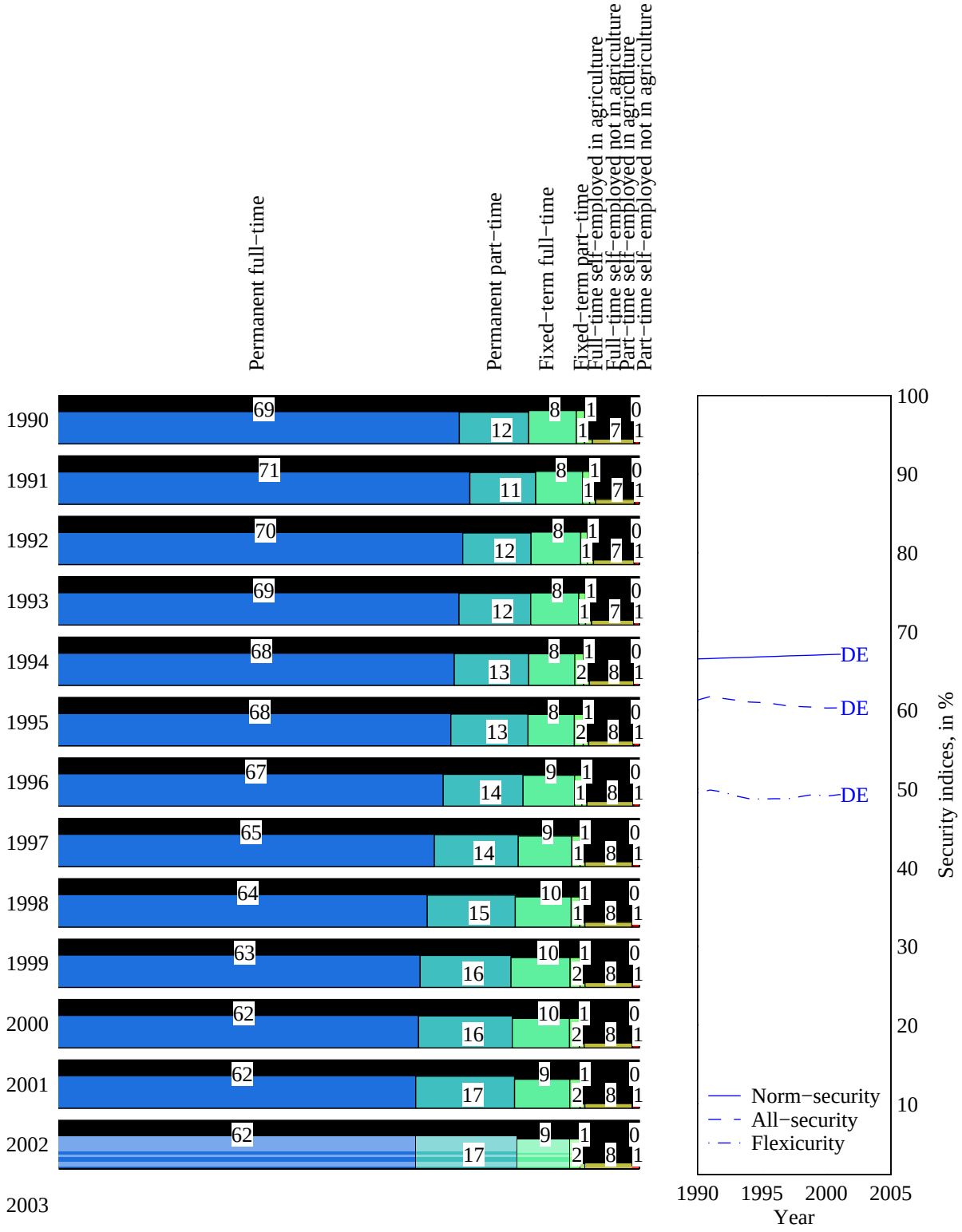


Table 2.2: Employment categories in Germany and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	69.3	11.8	8.1	1.4	1.3	7.0	0.1	0.9	61.3	49.5
	66.5	65.5	68.8	68.8	8.8	9.8	5.8	8.8		
1991	71.1	11.2	8.0	1.2	1.0	6.6	0.1	0.8	61.7	49.9
	66.6	65.6	68.0	68.0	8.8	9.8	5.8	8.8		
1992	69.9	11.7	8.5	1.1	1.0	6.9	0.1	0.8	61.5	49.6
	66.6	65.6	67.2	67.2	8.8	9.8	5.8	8.8		
1993	69.2	12.2	8.2	1.2	1.0	7.2	0.1	0.9	61.3	49.1
	66.7	65.7	66.4	66.4	8.8	9.8	5.8	8.8		
1994	68.4	12.7	7.8	1.5	1.0	7.6	0.1	0.9	61.1	48.8
	66.7	65.7	65.6	65.6	8.8	9.8	5.8	8.8		
1995	67.8	13.2	7.9	1.5	0.9	7.6	0.1	1.0	61.0	48.7
	66.8	65.8	64.8	64.8	8.8	9.8	5.8	8.8		
1996	66.5	13.6	8.8	1.3	0.9	7.9	0.1	1.0	60.8	48.8
	66.8	65.8	64.0	64.0	8.8	9.8	5.8	8.8		
1997	65.0	14.3	9.2	1.4	0.9	8.1	0.1	1.1	60.5	48.7
	66.9	65.9	63.2	63.2	8.8	9.8	5.8	8.8		
1998	63.8	15.0	9.5	1.5	0.8	8.0	0.1	1.2	60.5	49.0
	66.9	65.9	62.4	62.4	8.8	9.8	5.8	8.8		
1999	62.6	15.5	10.1	1.7	0.9	8.1	0.1	1.2	60.4	49.3
	67.0	66.0	61.6	61.6	8.8	9.8	5.8	8.8		
2000	62.3	16.0	9.8	1.7	0.8	8.2	0.1	1.2	60.3	49.1
	67.1	66.1	60.8	60.8	8.8	9.8	5.8	8.8		
2001	61.9	16.8	9.4	1.7	0.8	8.1	0.1	1.2	60.3	49.3
	67.1	66.1	60.0	60.0	8.8	9.8	5.8	8.8		
2002	61.8	17.3	9.0	1.8	0.8	8.1	0.1	1.2	60.3	49.2
	67.2	66.2	59.1	59.1	8.8	9.8	5.8	8.8		
2003	67.2	66.2	58.3	58.3	8.8	9.8	5.8	8.8		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	63.5	63.5	53.0	53.0	0.0	0.0	0.0	0.0	5.0	
Pension	60.0	50.0	40.0	40.0	50.0	60.0	20.0	50.0	1.0	
Unempl.insur.	61.5	61.5	53.8	53.8	7.7	7.7	7.7	7.7	1.0	
Sick leave	93.8	93.8	93.8	93.8	6.3	6.3	6.3	6.3	1.0	
Matern.leave	88.9	88.9	88.9	88.9	11.1	11.1	11.1	11.1	1.0	
Paid holidays	50.0	50.0	50.0	50.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	67.2	66.2	58.3	58.3	8.8	9.8	5.8	8.8	1.0	

Figure 2.3: Employment categories in Germany and their level of employment security and of social security (Source: EuroStat and own estimation)



The Flexicurity decreases. It indicates at an increasing share of self-employment and/or at relaxing the employment protection legislation for atypically employed. (Sweden, Denmark.)

2.3 The Flexicurity index of a single country

To be specific, consider the case of Germany. The related model output is displayed in Table 2.2 coupled with Figure 2.3. The columns of the table represent eight employment categories, somewhat more refined than the six categories considered by Hoffmann and Walwei (2000) and five considered by Klammer and Tillmann (2001c, p. 514):

1. Permanently full-time employed
2. Permanently part-time employed
3. Fixed-term full-time employed
4. Fixed-term part-time employed
5. Full-time self-employed in agriculture
6. Full-time self-employed not in agriculture
7. Part-time self-employed in agriculture
8. Part-time self-employed not in agriculture.

Each table cell contains two elements arranged in a vertical pair. The top number is the size of the given employment group in the given year in %. The data are available from the EuroStat (2004), except for the year 2003.

The bottom number of the pair is the level of security of the given employment group in the given year. This estimation is independent of the group size, and the corresponding estimates are given for all years (although the data on the size of employment categories is missed for 2003).

Figure 2.3 depicts each number pair by a color rectangle. Its length is the size of the given employment group in the given year. Its height is the level of security. The black background shows the 'security deficit', that is, the residual which is necessary to attain the 100%-security.

Such a representation visualizes the three security indices as follows.

- The Norm-security is the surface ratio of *the left* color rectangle to its framing black rectangle.
- The All-security is the surface ratio of *the whole* colored area to its framing black rectangle.
- The Flexicurity is the surface ratio of the whole colored area *but the left* rectangle to its framing black rectangle (also with no left rectangle).

The evolution of the three indices during 1990–2003 is shown in the right-hand plot of Figure 2.3.

The Appendix contains similar tables and figures for the other 15 European countries.

Chapter 3

Estimation

3.1 Composition of security estimates

The bottom section of Table 2.2 displays the composition of security estimates for each employment category for the year 2002. The estimate is composed from six partial estimates, each obtained with respect to a certain partial criterion:

1. Strictness of the employment protection legislation (EPL) as given by the OECD (1999, p. 66)

2. Entitlement to paid holidays (OECD 2002, p. 144–150)

3. Entitlement to paid sick leave (OECD 2002, p. 144–150)

4. Entitlement to paid maternity leave (OECD 2002, p. 144–150)

5. Entitlement to participation in a public pension scheme (OECD 2002, p. 144–150)

6. Entitlement to paid maternity leave (OECD 2002, p. 144–150).

The total estimate is a weighted average of the six scores. The criteria weights are 5, 1, 1, 1, 1, 1 to reflect the equal importance of employment security represented by one criterion and of social security represented by five criteria. These weights are displayed in the bottom-right sub-column of Table 2.2.

The contribution of each partial estimate into the total security estimate is depicted in Figure 2.3 for the year 2002. Each color rectangle is split into six layers whose thickness are proportional to the weighted scores of partial criteria.

3.2 Estimates of employment security

The estimates of the level of employment security in Germany in 2002 constitute the first row of the bottom section of Table 2.2. They are based on the scores suggested by the OECD (1999, p. 66) reproduced in Table 3.1. In our study these aggregated indicators are taken for granted; for their detailed derivation see the source cited.

The situation for late 1980s and late 1990s is attributed to the years 1989 and 1999, respectively. Then, for each country, the indices for 1990–2003 are obtained by linear

Table 3.1: Summary indicators of the strictness of employment protection legislation. Source: own estimation based on OECD (1999) pp.52–53, 66

	Regular employment		Temporary employment		Collective dismissals
	Late 1980s	Late 1990s	Late 1980s	Late 1990	Late 1990s
	Score 0–6	Score 0–6	Score 0–6	Score 0–6	Score 0–6
Germany	2.7	2.8	3.8	2.3	3.1
Austria	2.6	2.6	1.8	1.8	3.3
Belgium	1.5	1.5	4.6	2.8	4.1
Switzerland	1.2	1.2	0.9	0.9	3.9
Czech Republic	2.8	2.8	0.5	0.5	4.3
Danemark	1.6	1.6	2.6	0.9	3.1
Spain	3.9	2.6	3.5	3.5	3.1
Finland	2.7	2.1	1.9	1.9	2.4
France	2.3	2.3	3.1	3.6	2.1
Italy	2.8	2.8	5.4	3.8	4.1
Netherlands	3.1	3.1	2.4	1.2	2.8
Norway	2.4	2.4	3.5	2.8	2.8
Poland	2.2	2.2	1.0	1.0	3.9
Portugal	4.8	4.3	3.4	3.0	3.6
Sweden	2.8	2.8	4.1	1.6	4.5
United Kingdom	0.8	0.8	0.3	0.3	2.9

regression. Since the scores for collective dismissals are available only for the late 1990s, their scores are assumed constant over the whole period of observations.

For employees, the score "Collective dismissals" is added to the scores "Employment protection legislation". For self-employed, the score "Collective dismissals" is always assumed 0.

The resulting scores are normalized, that is, proportionally reduced to the range 0–1, with 0 and 1 being attributed to the county/year with the lowest and highest score, respectively. The scores computed in this way constitute the employment security estimates for every employment category, for every country and for every year.

3.3 Estimates of social security benefits

Tables 3.2–3.6 are devoted to employees' entitlement to a certain social security benefit. The first vertical section contains juridical data. The section is extracted from the joint table provided by the OECD (2002, p. 146–148) updated and completed by Martin Kimmich from the MISSOC data base — Mutual Information System on SOCial Protection of the European Commission (2004). The second vertical section contains an ordinal evaluation given however sometimes in fractions (and corresponding ranks in the parentheses) of employment groups in different countries with respect to the entitlement to the benefit considered.

The evaluation has been also performed by Martin Kimmich. His task was to order $8 \times 16 = 128$ employment groups in different countries with respect to each of five social security criteria. He has usually started from rank 1, giving it to the best groups with respect to the given criterion. Next he has attributed rank 2 to the next-best groups, and so on. Sometimes he has found that certain groups should be put between the ones already ranked. In order not to renumber the ranks he just attributed these groups the

Table 3.2: Evaluation (ranking 1–9) national groups of employees with respect to social security benefit 'Pension'. Source: own estimation based on OECD (2002), p.146–148

	General conditions		Employment type							
	Statutory right	Employment duration	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
Germany	yes	> 325 EUR and 60 months	2.5(4)	3(5)	3.5(6)	3.5(6)	3(5)	2.5(4)	4.5(8)	3(5)
Austria	yes	180-300 months with earnings > 309 EUR	3(5)	3.5(6)	3(5)	3.5(6)	3(5)	3(5)	3.5(6)	3.5(6)
Belgium	yes	all	1(1)	1(1)	1(1)	1(1)	1.5(2)	1.5(2)	1.5(2)	1.5(2)
Switzerland	yes	1 year	2(3)	2(3)	2.5(4)	2.5(4)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Czech Republic	yes	not applicable	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Danemark	yes	all	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
Spain	yes	15 years	3(5)	3(5)	4(7)	4(7)	3(5)	3(5)	3(5)	3(5)
Finland	yes	a month and minimum earnings	1(1)	2(3)	1(1)	2(3)	1.5(2)	1.5(2)	2(3)	2(3)
France	yes	all	1(1)	1(1)	1(1)	1(1)	2(3)	2(3)	2(3)	2(3)
Italy	yes	5 years	2.5(4)	3(5)	3.5(6)	3.5(6)	2.5(4)	2.5(4)	3(5)	3(5)
Netherlands	yes	all	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
Norway	yes	all	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
Poland	yes	it varies	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Portugal	yes	15 years with >120 days	3(5)	5(9)	4(7)	5(9)	3(5)	3(5)	5(9)	5(9)
Sweden	yes	all	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
United Kingdom	yes	earnings > threshold	2(3)	2.5(4)	2(3)	2.5(4)	2(3)	2(3)	2.5(4)	2.5(4)

Table 3.3: Evaluation (ranking 1–12) national groups of employees with respect to social security benefit 'Unemployment insurance'. Source: own estimation based on OECD (2002), p.146–148

	General conditions		Employment type							
	Statutory right	Conditions	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
Germany	yes	12 months in last 3 years or 6 months if a "seasonal worker"	2(5)	2(5)	2.5(6)	2.5(6)	6(12)	6(12)	6(12)	6(12)
Austria	yes	52 weeks in past 24 months and earnings > 309 EUR	2(5)	2.5(6)	3(8)	3(8)	6(12)	2(5)	6(12)	2.5(6)
Belgium	yes	312 days in past 18 months for < 36 years old and more days for older age groups	3(8)	4(10)	3(8)	4(10)	6(12)	6(12)	6(12)	6(12)
Switzerland	yes	6 months in the past 2 years; 12 months for a repeat claim	1.5(3)	1.5(3)	1.75(4)	1.75(4)	NaN(7)	NaN(7)	NaN(7)	NaN(7)
Czech Republic	yes	12 months in past 3 years	2(5)	2(5)	2.75(7)	2.75(7)	NaN(7)	NaN(7)	NaN(7)	NaN(7)
Danemark	volontary participation	52 weeks in past 3 years; 34 weeks for part-timers	2(5)	2(5)	2.75(7)	2.75(7)	2.5(6)	2.5(6)	2.5(6)	2.5(6)
Spain	yes	360 days in past 6 years	2(5)	2(5)	2.5(6)	2.5(6)	6(12)	6(12)	6(12)	6(12)
Finland	yes	43 weeks in past 24 months and > 18 hours per week	1.75(4)	4(10)	2(5)	4(10)	1.75(4)	1.75(4)	4(10)	4(10)

Table 3.3: Evaluation (ranking 1–12) national groups of employees with respect to social security benefit 'Unemployment insurance'. Source: own estimation based on OECD (2002), p.146–148 (continued)

	General conditions		Employment type							
	Statutory right	Conditions	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
France	yes	4 months in past 18 months	1(1)	1(1)	1.25(2)	1.25(2)	6(12)	6(12)	6(12)	6(12)
Italy	yes	52 weeks in past 2 years	2(5)	2(5)	3(8)	3(8)	6(12)	6(12)	6(12)	6(12)
Netherlands	yes	26 weeks in the last 39 weeks	1.5(3)	1.5(3)	1.75(4)	1.75(4)	6(12)	6(12)	6(12)	6(12)
Norway	yes	income past year > 125% of basis; or mean income past 3 years > 100% of basis	2.5(6)	3(8)	2.5(6)	3(8)	6(12)	6(12)	6(12)	6(12)
Poland	yes, if earnings > minimum wage	365 days in past 18 months	2(5)	3.5(9)	3(8)	3.5(9)	NaN(7)	NaN(7)	NaN(7)	NaN(7)
Portugal	yes	540 days in past 24 months	3.5(9)	4.5(11)	4.5(11)	4.5(11)	6(12)	6(12)	6(12)	6(12)
Sweden	yes	6 months in the past 12 months	1.5(3)	1.5(3)	1.5(3)	1.5(3)	2.5(6)	2.5(6)	2.5(6)	2.5(6)
United Kingdom	yes	some employment in the previous 2 years and contributions paid > some multiple of threshold	3(8)	3.5(9)	3(8)	3.5(9)	6(12)	6(12)	6(12)	6(12)

Table 3.4: Evaluation (ranking 1–15) national groups of employees with respect to social security benefit 'Sick leave'. Source: own estimation based on OECD (2002), p.146–148

	General conditions		Employment type							
	Statutory right	Employment duration	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
Germany	yes	all	1(1)	1(1)	1(1)	1(1)	6(15)	6(15)	6(15)	6(15)
Austria	yes (not for on-call workers)	monthly earnings > 309 EUR	1.5(2)	3.5(9)	1.5(2)	3.5(9)	6(15)	3.5(9)	6(15)	3.5(9)
Belgium	yes	3 months	2(4)	2(4)	2.5(5)	2.5(5)	3.5(9)	3.5(9)	3.5(9)	3.5(9)
Switzerland	voluntary participation	3 months	2(4)	2(4)	2.5(5)	2.5(5)	NaN(8)	NaN(8)	NaN(8)	NaN(8)
Czech Republic	no	not applicable	6(15)	6(15)	6(15)	6(15)	NaN(8)	NaN(8)	NaN(8)	NaN(8)
Danemark	yes	> 72 hours in past 8 weeks	1(1)	3.5(9)	1(1)	3.5(9)	3.75(10)	3.75(10)	3.75(10)	3.75(10)
Spain	yes	180 days in past 5 years	4(11)	4.5(13)	5(14)	5(14)	4(11)	4(11)	4.5(13)	4.5(13)
Finland	yes	all	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
France	yes	800 hours in past 12 months	3(7)	4(11)	3.5(9)	4(11)	6(15)	5(14)	6(15)	5(14)
Italy	yes	all	1(1)	1(1)	1(1)	1(1)	6(15)	6(15)	6(15)	6(15)
Netherlands	yes	all	1(1)	1(1)	1(1)	1(1)	6(15)	6(15)	6(15)	6(15)
Norway	yes	14 days	1.5(2)	1.5(2)	1.5(2)	1.5(2)	2(4)	2(4)	2(4)	2(4)
Poland	yes	30 days	1.75(3)	1.75(3)	1.75(3)	1.75(3)	NaN(8)	NaN(8)	NaN(8)	NaN(8)
Portugal	yes	6 months	3.5(9)	3.5(9)	3.75(10)	3.75(10)	4(11)	4(11)	4.25(12)	4.25(12)
Sweden	yes	all	1(1)	1(1)	1(1)	1(1)	1.5(2)	1.5(2)	1.5(2)	1.5(2)
United Kingdom	yes	3 months and earnings > 500 EUR	2.5(5)	4(11)	2.75(6)	4(11)	3(7)	3(7)	3.25(8)	3.25(8)

Table 3.5: Evaluation (ranking 1–8) national groups of employees with respect to social security benefit 'Payed maternity leave'. Source: own estimation based on OECD (2002), p.146–148

	General conditions			Employment type							
	Statutory right	Contribution period	Beyond contract	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
Germany	yes	all	yes	1(1)	1(1)	1(1)	1(1)	6(8)	6(8)	6(8)	6(8)
Austria	yes	monthly earnings > 309 EUR	yes	1(1)	3(4)	1(1)	3(4)	5.5(7)	3(4)	5.5(7)	3(4)
Belgium	yes	all	yes (at benefit level)	1(1)	1(1)	1(1)	1(1)	3(4)	3(4)	3(4)	3(4)
Switzerland	yes	all	yes	1(1)	1(1)	1(1)	1(1)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Czech Republic	no	not applicable	yes	6(8)	6(8)	6(8)	6(8)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Danemark	yes	> 120 hours in past 13 weeks	yes	1.5(2)	3(4)	1.5(2)	3(4)	1.5(2)	1.5(2)	1.5(2)	1.5(2)
Spain	yes	180 days in past 5 years	no	3(4)	3.5(5)	3.5(5)	3.5(5)	3(4)	3(4)	3.5(5)	3.5(5)
Finland	yes	all	yes (by the state)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
France	yes	200 hours per quarter in past 6 months or 800 hours in past year	yes	1.75(3)	3(4)	3(4)	3(4)	1(1)	NaN(5)	1(1)	NaN(5)
Italy	yes	all	no	1(1)	1(1)	1(1)	1(1)	1.5(2)	1.5(2)	1.5(2)	1.5(2)
Netherlands	yes	all	no	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
Norway	yes	all	yes	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
Poland	yes	6 months	no	3(4)	3(4)	3.5(5)	3.5(5)	NaN(5)	NaN(5)	NaN(5)	NaN(5)
Portugal	yes	6 months	yes	3(4)	3(4)	3.5(5)	3.5(5)	6(8)	6(8)	6(8)	6(8)
Sweden	yes	all	yes	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
United Kingdom	yes	26 weeks and earnings > 500 EUR	yes	3(4)	4(6)	3.5(5)	4(6)	1(1)	1(1)	1(1)	1(1)

Table 3.6: Evaluation (ranking 1–7) national groups of employees with respect to social security benefit 'Paid holidays'. Source: own estimation based on OECD (2002), p.146–148

	General conditions		Employment type							
	Statutory right	Contribution period	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture
Germany	yes	6 months	3(4)	3(4)	3(4)	3(4)	6(7)	6(7)	6(7)	6(7)
Austria	yes	6 months	3(4)	3(4)	3(4)	3(4)	6(7)	6(7)	6(7)	6(7)
Belgium	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Switzerland	yes	pro rata	2(3)	3(4)	2(3)	3(4)	6(7)	6(7)	6(7)	6(7)
Czech Republic	yes		NaN(4)	NaN(4)	NaN(4)	NaN(4)	6(7)	6(7)	6(7)	6(7)
Danemark	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Spain	yes		NaN(4)	NaN(4)	NaN(4)	NaN(4)	6(7)	6(7)	6(7)	6(7)
Finland	yes	>14 days or >35 hours per months	1.5(2)	1.5(2)	1.5(2)	1.5(2)	6(7)	6(7)	6(7)	6(7)
France	yes	1 month	2(3)	2(3)	2(3)	2(3)	6(7)	6(7)	6(7)	6(7)
Italy	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Netherlands	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Norway	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Poland	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
Portugal	yes	30 days	2(3)	2(3)	2(3)	2(3)	6(7)	6(7)	6(7)	6(7)
Sweden	yes	all	1(1)	1(1)	1(1)	1(1)	6(7)	6(7)	6(7)	6(7)
United Kingdom	yes (not for all sectors)	13 weeks (currently under consideration to remove this restriction)	4(5)	4(5)	4(5)	4(5)	6(7)	6(7)	6(7)	6(7)

corresponding intermediate rank, say, 1.5.

The original fraction-valued ranks are then automatically converted to integer-valued ranks given in the parentheses. No evaluation is shown by NaN (not a number). As traditional in some empirical studies, missing data are replaced by mean values. The non-evaluated possibilities get the rounded middle rank. For instance, if there are $R = 15$ rank degrees (R is maximal integer-valued rank) then NaN is ranked 8.

The metrical scores of employment groups for each partial criterion are derived from the integer-valued ranks. At first the ranks are specially normalized, that is, each rank r is replaced by $\frac{r}{R+1}$, where $R = \max r$ for the given table (the reasons are explained in the next chapter). The top rank is thereby replaced by $S = \frac{1}{R+1}$, and the bottom-rank, is replaced by $S = \frac{R}{R+1}$. Then the scores S are inverted by applying the transformation $1 - S$ to the end of attributing higher scores to higher ranks.

The scores of German employment categories with respect to six security criteria are shown in the bottom section of Table 2.2 for the year 2002. Since the data on social regulation is not available for every year, we approximately assume that these estimates remain constant over the whole period of observations.

The six scores of an employment group in a given country (one for the employment security and five for social benefits) are then summarized with the weights of the partial criteria (in our case weights 5, 1, 1, 1, 1, 1 are converted to normalized weights 0.5, 0.1, 0.1, 0.1, 0.1, 0.1, which total is 1). The weighted sum of partial scores is considered as the aggregate score of the employment and social security of the given employment group in the given country.

Chapter 4

Methodology

4.1 Mathematical foundation

Using ordinal ranks for metrical scores is a great advantage, since ranking juridical cases is much more reliable than estimating them metrically. This subsequent substitution of scores for ranks requires a mathematical explanation. The underlying idea goes back to the justification of Borda's (1733–1799) method of marks by Laplace (1749–1827); for the modern account see Black (1958), Tangian (1991), and McLane and Urken (1994).

Recall that Borda has proposed to evaluate candidates to the members of the Royal Academy of Sciences in Paris by the sum of their ranks in the ballot schedules provided by active members of the Academy. Laplace supposed that these ranks were manifestations of some latent metrical estimates. He argued that n ordered metrical estimates (scores) with the uniform distribution had the ratio of their expectations as their ranks

$$\mu_1 : \mu_2 : \ \ldots \ : \mu_n = 1 : 2 : \ \ldots \ : n \ ;$$

see Kendall and Moran (1963) for the rigorous proof. By the central limit theorem (Kendall and Stuart 1958, Korn and Korn 1968) a sum of a large number of metrical scores is well approximated by the sum of their expectations, or ranks. Laplace has concluded that in a large statistical model metrical scores can be replaced by ranks with a negligible error.

This way of thought can be implemented with a greater precision and not for a large number but for a few metrical estimates (scores). Thus, expert ranks are regarded as rounded metrical scores with a certain rounding error. The ranking is however assumed correct. Our goal is to estimate the total error in the indices Norm-security, All-security, and Flexicurity.

Theorem 1 (Accuracy of a metrical index derived from ordinal data)
Consider a set of options which are independently ranked with respect to several criteria numbered by k. Let under the kth ranking the options fall into R_k ranking classes, i.e. R_k is the maximal rank in the kth evaluation. On the other hand, suppose that the ranks are backed up by some metrical scores uniformly distributed in the segment $[0; 1]$.[1]

[1] In statistics the uniform distribution it is a standard default assumption if the distribution is not a priori known.

Suppose that a certain option is evaluated by a weighted sum of its scores and of its ranks, respectively

$$\begin{aligned} \tilde{I} &= \sum w_k s_{r_k} \ , \quad \text{where all} \quad w_k \geq 0, \quad \sum_k w_k = 1 \ , \\ I &= \sum_k w_k \frac{r_k}{R_k + 1} \end{aligned}$$

where s_{r_k} is the r_kth score in the ordered (!) *set of scores under the kth criterion.*

Then the 'rounding inaccuracy' $\Delta = \tilde{I} - I$ has the expectation and the variance, respectively,

$$\begin{aligned} \mu = \mathsf{E}\,\Delta &= 0 \\ \sigma^2 = \mathsf{V}\,\Delta &= \sum_k w_k^2 \frac{r_k(R_k - r_k + 1)}{(R_k + 1)^2(R_k + 2)} \qquad (4.1) \\ &\leq \frac{1}{4} \sum_k \frac{w_k^2}{R_k + 2} \qquad (4.2) \end{aligned}$$

4.2 The accuracy of the indices

Since we accept the OECD estimation of the strictness of employment protection legislation, the accuracy should be estimated only for the weighted sum of five scores of social benefits.

In our five evaluations in Tables 3.2–3.6 the maximal ranks and normalized weights are respectively

$$\begin{aligned} R_k &= 9, 12, 15, 8, 7 \\ w_k &= 0.1, \quad k = 1, \ldots, 5 \ . \end{aligned}$$

Substitute these values into the approximate inequality (4.2) and obtain

$$\begin{aligned} \sigma^2 &= 0.0011 \\ \sigma &= 0.0329 \ . \end{aligned}$$

That is, the standard 'rounding error' is under 3.29% measured in % of the 'security scale', where the indices are defined.

The estimations by the exact formula (4.1) for every country for every year are shown in Table 4.1. The exact accuracy estimate is performed as follows. The formula (4.1) is applied to find the standard error of security estimate for a given employment group.

- The error inherent in the Norm-security for a certain country in a certain year is just the error inherent in the security estimate of the first national employment group in the given year.

- The error inherent in the All-security is the weighted error of all national employment groups in the given year, with the actual eight weights (for the given year) of the national employment categories. Their scores are no longer independent as

Table 4.1:

Standard errors σ in "security %" for Norm-security / All-Security / Flexicurity

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	max σ
DE Germany	1.37	1.39	1.37	1.37	1.36	1.35	1.34	1.33	1.31	1.30	1.30	1.29	1.29		1.39
	1.58	1.59	1.58	1.58	1.58	1.58	1.58	1.57	1.57	1.57	1.57	1.57	1.57		1.59
	1.58	1.59	1.58	1.58	1.58	1.58	1.58	1.57	1.57	1.57	1.57	1.57	1.57		1.59
AT Austria						1.37	1.35	1.35	1.34	1.33	1.33	1.32	1.31		1.37
						1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54		1.54
						1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54		1.54
BE Belgium	1.49	1.50	1.49	1.48	1.48	1.47	1.47	1.46	1.44			1.43	1.43	1.41	1.50
	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71			1.72	1.72	1.72	1.72
	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71	1.71			1.72	1.72	1.72	1.72
CH Switzerland							1.26	1.25	1.25	1.24	1.24	1.23	1.22	1.21	1.26
							1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64
							1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64
CZ Czech Republic								1.10	1.10	1.09	1.08	1.08	1.08	1.06	1.10
								1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
								1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
DK Danemark	1.41	1.41	1.42	1.41	1.43	1.43	1.44	1.42	1.44	1.45	1.45	1.48	1.48	1.46	1.48
	1.75	1.75	1.75	1.75	1.75	1.76	1.76	1.75	1.75	1.76	1.76	1.76	1.76	1.76	1.76
	1.75	1.75	1.75	1.75	1.75	1.76	1.76	1.75	1.75	1.76	1.76	1.76	1.76	1.76	1.76
ES Spain	1.06	1.04	1.03	1.03	1.02	1.01	1.02	1.02	1.03	1.04	1.05	1.05	1.06	1.07	1.07
	1.36	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.36	1.36	1.36	1.36	1.37	1.37
	1.36	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.36	1.36	1.36	1.36	1.37	1.37
FI Finland						1.48	1.45	1.46	1.45	1.45	1.45	1.46	1.46	1.45	1.48
						1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76
						1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76	1.76
FR France	1.42	1.42	1.42	1.41	1.40	1.39	1.39	1.38	1.37	1.37	1.36	1.37	1.38	1.39	1.42
	1.63	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.65	1.64	1.65
	1.63	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.64	1.65	1.64	1.65
IT Italy	1.47	1.47	1.45	1.46	1.44	1.44	1.43	1.43	1.42	1.41	1.40	1.41	1.41	1.41	1.47
	1.65	1.65	1.65	1.65	1.65	1.64	1.64	1.64	1.64	1.64	1.64	1.65	1.65	1.65	1.65
	1.65	1.65	1.65	1.65	1.65	1.64	1.64	1.64	1.64	1.64	1.64	1.65	1.65	1.65	1.65
NL Netherlands	1.42	1.41	1.40	1.39	1.36	1.34	1.33	1.34	1.33	1.33	1.29	1.27	1.26		1.42
	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81		1.81
	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81		1.81
NO Norway						1.39	1.42	1.42	1.43	1.44	1.45	1.46	1.45	1.43	1.46
						1.78	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
						1.78	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79	1.79
PL Poland											1.36	1.31	1.29	1.27	1.36
											1.55	1.54	1.54	1.54	1.55
											1.55	1.54	1.54	1.54	1.55
PT Portugal	1.11	1.12	1.17	1.18	1.17	1.16	1.15	1.13	1.11	1.11	1.12	1.11	1.09	1.10	1.18
	1.31	1.31	1.33	1.33	1.32	1.32	1.31	1.31	1.31	1.31	1.32	1.31	1.31	1.31	1.33
	1.31	1.31	1.33	1.33	1.32	1.32	1.31	1.31	1.31	1.31	1.32	1.31	1.31	1.31	1.33
SE Sweden						1.42	1.44	1.45	1.45	1.45	1.46	1.47	1.47	1.46	1.47
						1.82	1.82	1.82	1.82	1.82	1.82	1.83	1.82	1.83	1.83
						1.82	1.82	1.82	1.82	1.82	1.82	1.83	1.82	1.83	1.83
UK United Kingdom	1.17	1.17	1.16	1.16	1.15	1.15	1.14	1.14	1.15	1.15	1.16	1.16	1.16	1.15	1.17
	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41
	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41

are evaluations with respect to different criteria. Their scores are evaluations of employment groups of same country with respect to the same criterion which are dependent. (For instance, full-time and part-time permanent employed in the same country can get the same evaluation.) Therefore, we cannot use the formula for adding variances where the weight coefficients are taken with squares. We just add eight errors of scores of eight national employment categories with the actual weights of the latter. Thereby we get the exact estimate of the All-security for a given country for a given year.

- The error inherent in the Flexicurity is computed similar to that of All-security. The only difference is that we consider all but the first ('normal') employment group. The error weights are correspondingly reduced to 1 by assuming that the total weights of seven groups of atypically employed (all but the normal employment group) is 100%.

The index error over all years is simply the maximal error over the period of observations. As one can see, the actual standard error of the indices is less than 1.83%.

4.3 Proof of Theorem 1

Fix the kth criterion. As shown by Kenadll and Moran (1963), the r_kth *ordered* score s_{r_k} is beta-distributed with the expectation and variance

$$\begin{aligned} \mathsf{E}s_{r_k} &= \frac{r_k}{R_k+1} \\ \mathsf{V}s_{r_k} &= \frac{r_k(R_k-r_k+1)}{(R_k+1)^2(R_k+2)} \ . \end{aligned}$$

Hence,

$$\begin{aligned} \mu = \mathsf{E}\,\Delta &= \mathsf{E}\,\tilde{I} - \mathsf{E}\,I \\ &= \sum_k w_k \mathsf{E}\,s_{r_k} - \sum_k w_k \frac{r_k}{R_k+1} \\ &= 0 \ . \end{aligned}$$

Since, by assumption, the estimation with respect to different criteria is independent, the variance of the sum of the estimates is equal to the sum of their variances. We obtain

$$\begin{aligned} \sigma^2 = \mathsf{V}\,\Delta &= \mathsf{V}\,\tilde{I} + \underbrace{\mathsf{V}\,I}_{=0 \text{ as constant}} \\ &= \sum_k w_k^2 \frac{r_k(R_k-r_k+1)}{(R_k+1)^2(R_k+2)} \\ &= \sum_k w_k^2 \frac{\left(\frac{R_k+1}{2}\right)^2 - \left(\frac{R_k+1}{2}-r_k\right)^2}{(R_k+1)^2(R_k+2)} \\ &\leq \sum_k w_k^2 \frac{\left(\frac{R_k+1}{2}\right)^2}{(R_k+1)^2(R_k+2)} \\ &= \frac{1}{4}\sum_k \frac{w_k^2}{R_k+2} \ . \end{aligned}$$

Chapter 5

Conclusions

The given study suggests an operational definition of flexicurity (Definition 2) which implies a quantitative index. Here are some of its properties

1. **(Composition of the index)** The Flexicurity index is based on statistical data on (a) proportions of the employment types (b) estimates of employment security and social security which are obtained from ranking juridical data, and (c) weight coefficients with which these estimates are accounted.

2. **(Analytic capacities)** Together with the complementary indices of Norm-security and All-security, the Flexicurity index suggests an analytical tool for explaining processes in the structure of employment, employment protection legislation, and social security.

3. **(Relativity of evaluation)** The index provides not absolute but relative evaluation. This is caused by the fact that the reference for the top security level is always the maximal *existing* level of security inherent in one employment type in one of the countries considered.

4. **(Limited accuracy)** The index is based on rankings which are rounded 'latent' metrical scores with a certain rounding error. The error can be reduced by applying more levels of ranking of the juridical cases and by considering more security criteria.

It seems that the approach used for constructing the flexicurity index can be used for other purposes as well. For instance, the quality of work in different countries can be characterized in a similar way. Instead of employment groups one can consider different industries or services, and instead of fringe benefits one can consider hourly earnings, employer-provided training, mobility, antisocial hours, and some other working conditions like described in (OECD 2002, pp. 153).

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Appendix: Country tables and figures

Table 5.1: Employment types in Austria and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1991	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1992	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1993	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1994	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1995	72.4	11.0	4.5	0.8	4.0	5.9	0.4	0.9	58.5	40.5
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1996	69.9	11.7	6.2	0.9	3.9	5.8	0.5	1.0	58.3	41.8
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1997	69.6	12.4	6.1	0.8	3.9	5.9	0.4	0.9	58.3	42.2
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1998	68.7	13.0	6.1	0.8	3.7	6.1	0.4	1.0	58.2	42.4
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
1999	67.7	14.0	6.3	0.7	3.5	6.1	0.4	1.1	58.2	43.1
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
2000	67.8	14.0	6.0	1.0	3.4	6.3	0.4	1.1	58.2	43.2
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
2001	67.3	14.3	6.1	1.1	3.3	6.4	0.4	1.0	58.2	43.3
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
2002	66.3	16.0	5.5	1.0	3.2	6.5	0.3	1.2	58.1	43.7
	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
2003	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	63.2	63.2	54.6	54.6	0.0	0.0	0.0	0.0	5.0	
Pension	50.0	40.0	50.0	40.0	50.0	50.0	40.0	40.0	1.0	
Unempl.insur.	61.5	53.8	38.5	38.5	7.7	61.5	7.7	53.8	1.0	
Sick leave	87.5	43.8	87.5	43.8	6.3	43.8	6.3	43.8	1.0	
Matern.leave	88.9	55.6	88.9	55.6	22.2	55.6	22.2	55.6	1.0	
Paid holidays	50.0	50.0	50.0	50.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	65.4	55.9	58.8	50.1	9.9	22.3	8.9	20.6	1.0	

Figure 5.1: Employment types in Austria versus employment security and fringe benefits (Source: EuroStat and own estimation)

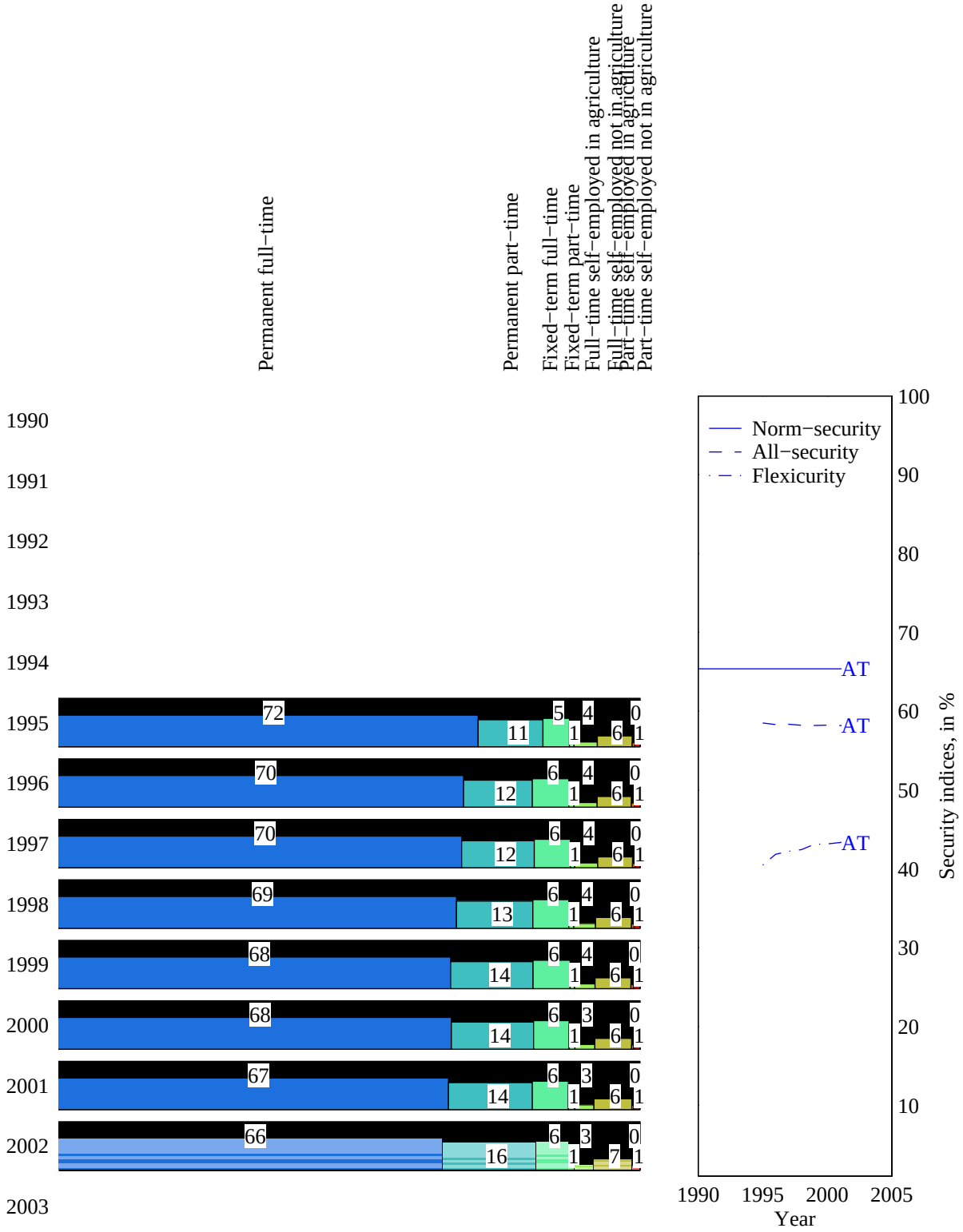

Table 5.2: Employment types in Belgium and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	70.1	8.9	2.8	1.6	2.2	13.9	0.0	0.4	60.5	43.0
	68.0	66.4	83.0	81.4	19.9	19.9	19.9	19.9		
1991	70.7	9.7	2.7	1.6	1.8	13.0	0.0	0.4	61.1	44.4
	68.0	66.4	82.0	80.5	19.9	19.9	19.9	19.9		
1992	70.0	10.3	2.7	1.5	1.8	13.2	0.1	0.5	60.9	44.4
	68.0	66.4	81.0	79.5	19.9	19.9	19.9	19.9		
1993	69.1	10.8	2.9	1.4	1.7	13.5	0.0	0.5	60.7	44.5
	68.0	66.4	80.1	78.5	19.9	19.9	19.9	19.9		
1994	69.0	10.9	3.0	1.3	1.8	13.3	0.1	0.5	60.7	44.5
	68.0	66.4	79.1	77.6	19.9	19.9	19.9	19.9		
1995	68.2	11.6	3.0	1.4	1.7	13.5	0.0	0.6	60.6	44.9
	68.0	66.4	78.2	76.6	19.9	19.9	19.9	19.9		
1996	67.4	11.8	3.4	1.6	1.8	13.4	0.0	0.6	60.6	45.4
	68.0	66.4	77.2	75.7	19.9	19.9	19.9	19.9		
1997	66.9	12.5	3.6	1.7	1.7	13.0	0.0	0.5	60.9	46.5
	68.0	66.4	76.2	74.7	19.9	19.9	19.9	19.9		
1998	65.0	12.9	4.4	2.1	1.4	13.5	0.0	0.6	60.8	47.4
	68.0	66.4	75.3	73.7	19.9	19.9	19.9	19.9		
1999	68.0	66.4	74.3	72.8	19.9	19.9	19.9	19.9		
2000	68.0	66.4	73.3	71.8	19.9	19.9	19.9	19.9		
2001	64.3	14.6	4.6	3.0	0.8	12.0	0.1	0.7	61.5	50.0
	68.0	66.4	72.4	70.8	19.9	19.9	19.9	19.9		
2002	63.9	15.7	3.9	2.6	0.9	12.0	0.0	0.9	61.3	49.4
	68.0	66.4	71.4	69.9	19.9	19.9	19.9	19.9		
2003	62.5	16.5	4.3	3.1	0.9	11.7	0.0	1.0	61.3	50.1
	68.0	66.4	70.4	68.9	19.9	19.9	19.9	19.9		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	60.0	60.0	68.1	68.1	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	80.0	80.0	80.0	80.0	1.0	
Unempl.insur.	38.5	23.1	38.5	23.1	7.7	7.7	7.7	7.7	1.0	
Sick leave	75.0	75.0	68.8	68.8	43.8	43.8	43.8	43.8	1.0	
Matern.leave	88.9	88.9	88.9	88.9	55.6	55.6	55.6	55.6	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	68.0	66.4	70.4	68.9	19.9	19.9	19.9	19.9	1.0	

Figure 5.2: Employment types in Belgium versus employment security and fringe benefits (Source: EuroStat and own estimation)

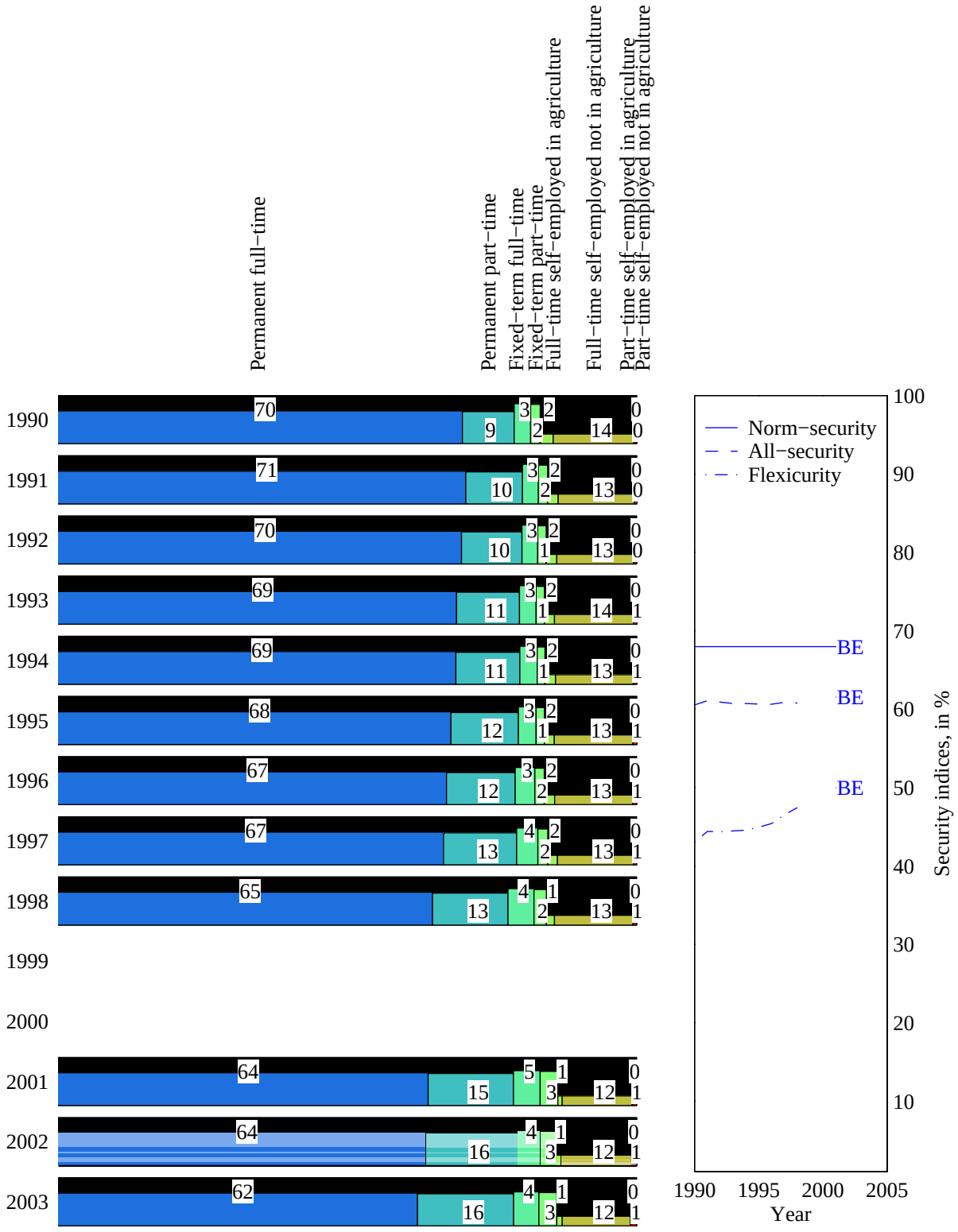

Table 5.3: Employment types in Switzerland and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1991	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1992	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1993	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1994	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1995	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1996	54.0	21.6	8.2	2.0	2.3	8.8	0.3	2.8	57.7	49.5
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1997	52.7	23.0	7.7	1.5	2.2	9.4	0.3	3.1	57.3	49.1
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1998	53.0	23.1	7.9	1.8	2.1	8.7	0.4	3.0	57.6	49.7
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
1999	52.2	23.3	8.0	2.0	2.2	8.9	0.3	3.1	57.5	49.7
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
2000	52.0	23.4	7.9	1.9	2.2	9.1	0.5	3.1	57.4	49.5
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
2001	51.1	24.7	7.9	2.0	2.1	8.7	0.4	3.0	57.6	50.2
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
2002	51.0	24.7	8.5	2.1	2.1	8.2	0.4	3.2	57.8	50.6
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
2003	49.6	25.4	8.3	2.0	2.0	8.7	0.4	3.5	57.4	50.3
	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	54.6	54.6	51.4	51.4	0.0	0.0	0.0	0.0	5.0	
Pension	70.0	70.0	60.0	60.0	50.0	50.0	50.0	50.0	1.0	
Unempl.insur.	76.9	76.9	69.2	69.2	46.2	46.2	46.2	46.2	1.0	
Sick leave	75.0	75.0	68.8	68.8	50.0	50.0	50.0	50.0	1.0	
Matern.leave	88.9	88.9	88.9	88.9	44.4	44.4	44.4	44.4	1.0	
Paid holidays	62.5	50.0	62.5	50.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	64.6	63.4	60.6	59.4	20.3	20.3	20.3	20.3	1.0	

Figure 5.3: Employment types in Switzerland versus employment security and fringe benefits (Source: EuroStat and own estimation)

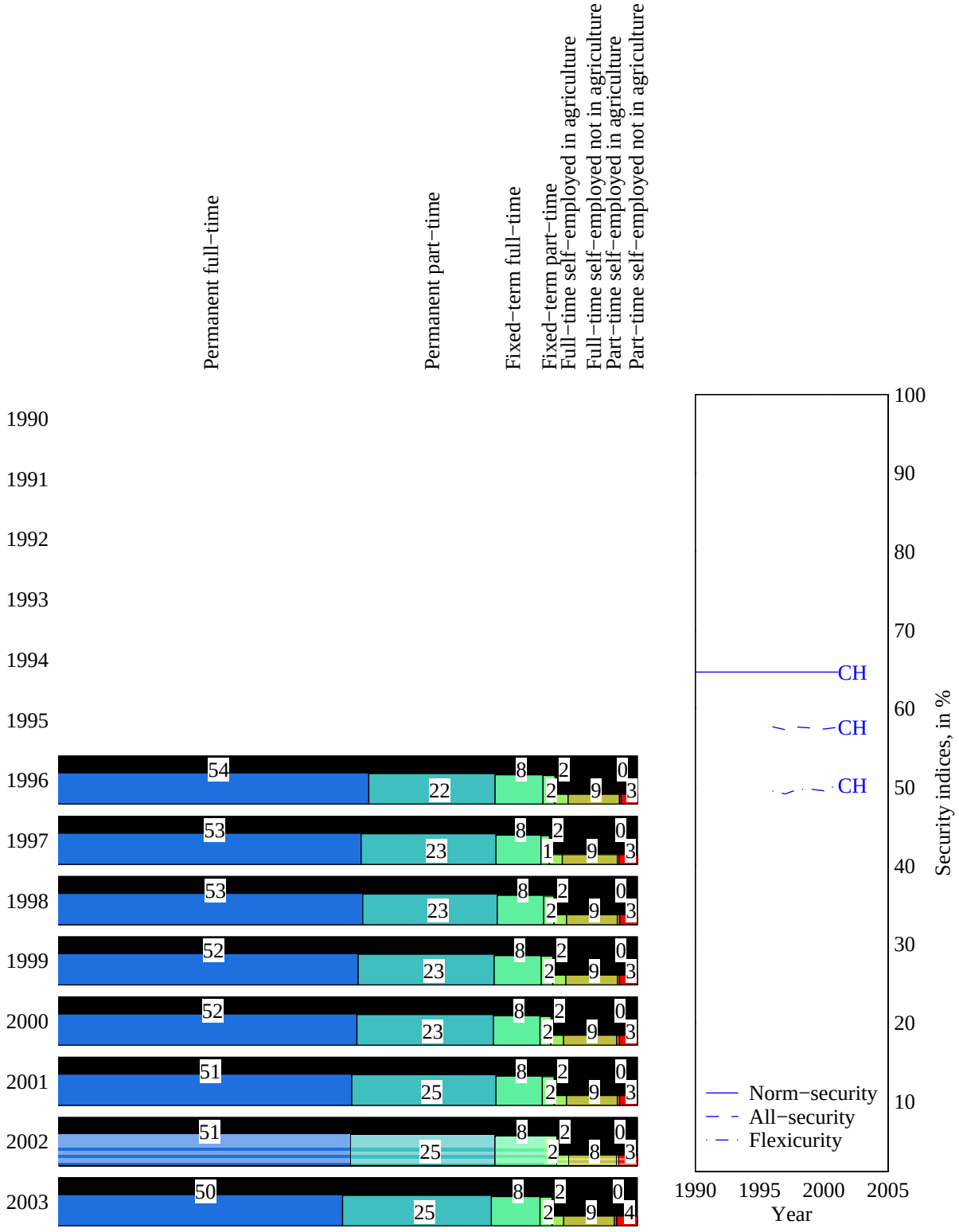

Table 5.4: Employment types in Czech Republic and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1991	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1992	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1993	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1994	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1995	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1996	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3		
1997	77.9 55.9	3.1 55.9	4.5 42.0	2.5 42.0	0.7 20.3	10.7 20.3	0.0 20.3	0.5 20.3	50.7	32.2
1998	77.8 55.9	3.2 55.9	3.8 42.0	2.1 42.0	0.8 20.3	11.9 20.3	0.0 20.3	0.5 20.3	50.4	31.1
1999	76.4 55.9	3.1 55.9	4.5 42.0	2.0 42.0	0.8 20.3	12.7 20.3	0.0 20.3	0.6 20.3	50.0	30.9
2000	75.5 55.9	2.8 55.9	5.2 42.0	1.8 42.0	0.9 20.3	13.2 20.3	0.0 20.3	0.6 20.3	49.7	30.7
2001	75.5 55.9	2.6 55.9	5.2 42.0	1.7 42.0	0.8 20.3	13.5 20.3	0.0 20.3	0.5 20.3	49.6	30.3
2002	75.3 55.9	2.3 55.9	5.3 42.0	1.7 42.0	0.7 20.3	14.0 20.3	0.0 20.3	0.7 20.3	49.5	29.8
2003	73.2 55.9	2.3 55.9	5.8 42.0	1.9 42.0	0.8 20.3	15.3 20.3	0.0 20.3	0.7 20.3	48.9	29.6
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	76.0	76.0	51.4	51.4	0.0	0.0	0.0	0.0	5.0	
Pension	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	1.0	
Unempl.insur.	61.5	61.5	46.2	46.2	46.2	46.2	46.2	46.2	1.0	
Sick leave	6.3	6.3	6.3	6.3	50.0	50.0	50.0	50.0	1.0	
Matern.leave	11.1	11.1	11.1	11.1	44.4	44.4	44.4	44.4	1.0	
Paid holidays	50.0	50.0	50.0	50.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	55.9	55.9	42.0	42.0	20.3	20.3	20.3	20.3	1.0	

Figure 5.4: Employment types in Czech Republic versus employment security and fringe benefits (Source: EuroStat and own estimation)

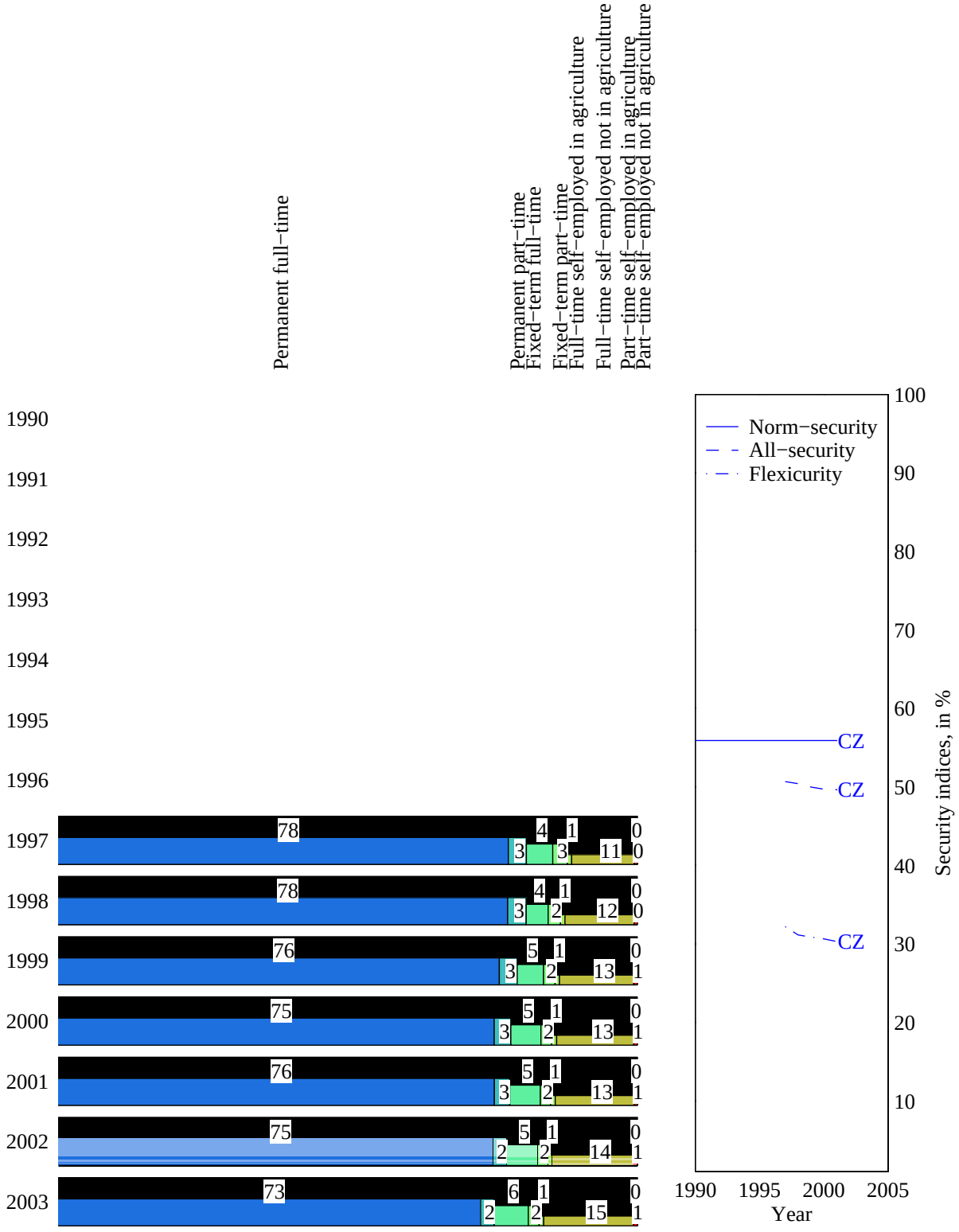

Table 5.5: Employment types in Danemark and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	61.1	19.5	7.2	2.5	2.5	6.3	0.4	0.5	61.1	53.2
	66.2	59.0	69.1	61.9	27.2	27.2	27.2	27.2		
1991	61.0	18.9	7.9	2.9	2.3	6.0	0.3	0.6	61.3	53.5
	66.2	59.0	68.2	61.0	27.2	27.2	27.2	27.2		
1992	61.7	19.3	8.0	2.0	2.3	5.8	0.3	0.7	61.3	53.3
	66.2	59.0	67.3	60.1	27.2	27.2	27.2	27.2		
1993	61.4	19.9	7.6	2.1	2.1	6.0	0.3	0.7	61.1	53.0
	66.2	59.0	66.4	59.2	27.2	27.2	27.2	27.2		
1994	62.5	18.1	8.5	2.4	1.9	6.0	0.1	0.4	61.3	53.2
	66.2	59.0	65.5	58.3	27.2	27.2	27.2	27.2		
1995	62.7	17.8	8.3	2.8	1.6	6.0	0.2	0.6	61.3	52.9
	66.2	59.0	64.6	57.3	27.2	27.2	27.2	27.2		
1996	63.3	18.0	7.8	2.5	1.4	6.2	0.2	0.7	61.2	52.5
	66.2	59.0	63.7	56.4	27.2	27.2	27.2	27.2		
1997	62.2	19.4	7.8	2.3	1.5	6.2	0.1	0.6	61.0	52.5
	66.2	59.0	62.8	55.5	27.2	27.2	27.2	27.2		
1998	63.3	19.0	6.8	2.4	1.5	6.1	0.2	0.6	60.9	51.9
	66.2	59.0	61.8	54.6	27.2	27.2	27.2	27.2		
1999	64.8	17.6	6.9	2.3	1.2	6.4	0.1	0.6	61.0	51.5
	66.2	59.0	60.9	53.7	27.2	27.2	27.2	27.2		
2000	64.6	17.9	6.6	2.7	1.5	6.0	0.2	0.6	60.9	51.3
	66.2	59.0	60.0	52.8	27.2	27.2	27.2	27.2		
2001	67.1	16.3	5.7	2.9	1.5	5.9	0.1	0.6	61.1	50.6
	66.2	59.0	59.1	51.9	27.2	27.2	27.2	27.2		
2002	66.9	16.8	5.5	2.7	1.3	6.1	0.1	0.6	61.0	50.4
	66.2	59.0	58.2	51.0	27.2	27.2	27.2	27.2		
2003	65.6	17.3	5.8	2.8	1.5	6.4	0.1	0.5	60.7	50.1
	66.2	59.0	57.3	50.1	27.2	27.2	27.2	27.2		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	50.3	50.3	37.4	37.4	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	1.0	
Unempl.insur.	61.5	61.5	46.2	46.2	53.8	53.8	53.8	53.8	1.0	
Sick leave	93.8	43.8	93.8	43.8	37.5	37.5	37.5	37.5	1.0	
Matern.leave	77.8	55.6	77.8	55.6	77.8	77.8	77.8	77.8	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	66.2	59.0	57.3	50.1	27.2	27.2	27.2	27.2	1.0	

Figure 5.5: Employment types in Danemark versus employment security and fringe benefits (Source: EuroStat and own estimation)

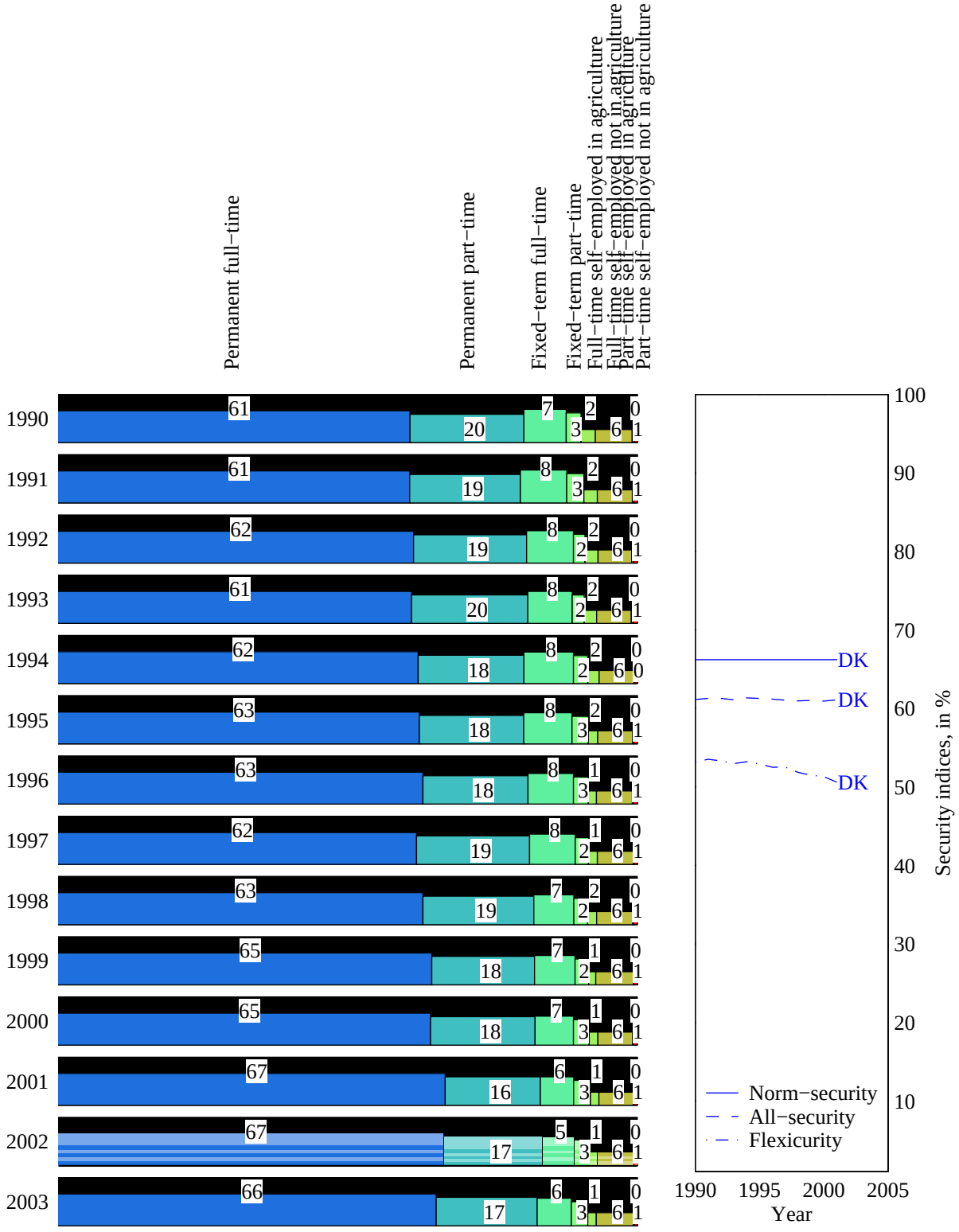

Table 5.6: Employment types in Spain and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	53.2	1.4	21.3	1.9	5.8	15.3	0.4	0.6	49.7	36.2
	61.6	59.3	54.4	54.4	15.7	15.7	13.3	13.3		
1991	51.8	1.4	23.4	1.9	5.1	15.5	0.3	0.5	49.5	37.2
	60.9	58.6	54.4	54.4	15.7	15.7	13.3	13.3		
1992	50.3	1.5	23.8	2.3	4.8	16.1	0.3	0.8	48.8	37.3
	60.2	57.9	54.4	54.4	15.7	15.7	13.3	13.3		
1993	50.9	1.8	22.2	2.7	4.9	16.4	0.3	0.8	48.4	36.8
	59.5	57.2	54.4	54.4	15.7	15.7	13.3	13.3		
1994	49.4	1.9	22.8	3.1	4.8	16.7	0.3	1.0	47.8	37.0
	58.8	56.5	54.4	54.4	15.7	15.7	13.3	13.3		
1995	48.4	2.1	23.8	3.4	4.4	16.5	0.4	1.0	47.6	37.7
	58.1	55.8	54.4	54.4	15.7	15.7	13.3	13.3		
1996	49.3	2.4	22.8	3.5	4.1	16.5	0.4	1.0	47.4	37.6
	57.4	55.1	54.4	54.4	15.7	15.7	13.3	13.3		
1997	49.5	2.7	22.9	3.6	3.8	16.2	0.3	1.0	47.3	38.0
	56.7	54.4	54.4	54.4	15.7	15.7	13.3	13.3		
1998	50.4	2.9	22.7	3.5	3.7	15.7	0.2	0.9	47.2	38.3
	56.0	53.7	54.4	54.4	15.7	15.7	13.3	13.3		
1999	51.3	2.8	22.5	4.0	3.3	15.2	0.2	0.7	47.3	38.8
	55.3	53.0	54.4	54.4	15.7	15.7	13.3	13.3		
2000	52.5	2.9	22.5	3.8	3.0	14.4	0.2	0.7	47.4	39.3
	54.7	52.3	54.4	54.4	15.7	15.7	13.3	13.3		
2001	52.9	2.9	21.9	3.9	3.0	14.5	0.2	0.7	46.9	39.0
	54.0	51.6	54.4	54.4	15.7	15.7	13.3	13.3		
2002	53.6	3.0	21.8	3.8	2.8	14.3	0.2	0.6	46.8	39.3
	53.3	50.9	54.4	54.4	15.7	15.7	13.3	13.3		
2003	54.4	3.1	21.4	3.9	2.5	13.9	0.2	0.6	46.6	39.5
	52.6	50.2	54.4	54.4	15.7	15.7	13.3	13.3		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	56.9	56.9	70.7	70.7	0.0	0.0	0.0	0.0	5.0	
Pension	50.0	50.0	30.0	30.0	50.0	50.0	50.0	50.0	1.0	
Unempl.insur.	61.5	61.5	53.8	53.8	7.7	7.7	7.7	7.7	1.0	
Sick leave	31.3	18.8	12.5	12.5	31.3	31.3	18.8	18.8	1.0	
Matern.leave	55.6	44.4	44.4	44.4	55.6	55.6	44.4	44.4	1.0	
Paid holidays	50.0	50.0	50.0	50.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	52.6	50.2	54.4	54.4	15.7	15.7	13.3	13.3	1.0	

Figure 5.6: Employment types in Spain versus employment security and fringe benefits (Source: EuroStat and own estimation)

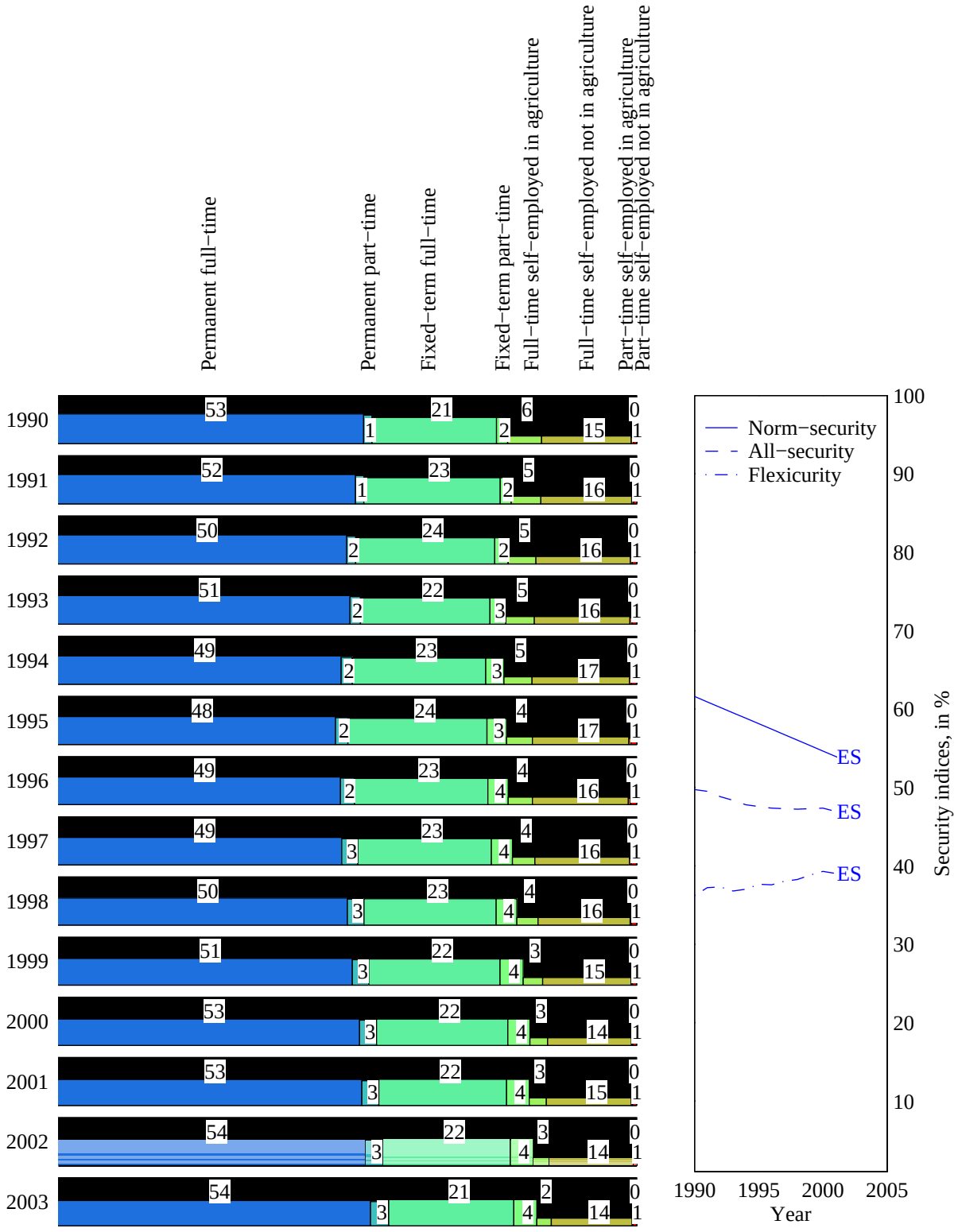

Table 5.7: Employment types in Finland and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	68.7	62.1	63.9	58.1	34.4	34.4	28.8	28.8		
1991	68.3	61.7	63.9	58.1	34.4	34.4	28.8	28.8		
1992	68.0	61.4	63.9	58.1	34.4	34.4	28.8	28.8		
1993	67.7	61.1	63.9	58.1	34.4	34.4	28.8	28.8		
1994	67.4	60.8	63.9	58.1	34.4	34.4	28.8	28.8		
1995	66.7	4.8	9.6	4.4	4.9	8.0	0.5	1.1	61.2	49.6
	67.1	60.4	63.9	58.1	34.4	34.4	28.8	28.8		
1996	64.4	5.8	11.3	3.4	4.9	8.7	0.4	1.1	60.8	50.0
	66.7	60.1	63.9	58.1	34.4	34.4	28.8	28.8		
1997	65.0	5.8	11.1	3.5	4.6	8.5	0.6	0.9	60.7	50.1
	66.4	59.8	63.9	58.1	34.4	34.4	28.8	28.8		
1998	64.7	6.0	11.4	3.8	4.3	8.3	0.7	0.8	60.6	50.5
	66.1	59.5	63.9	58.1	34.4	34.4	28.8	28.8		
1999	64.4	6.8	12.2	3.6	3.6	8.0	0.5	0.9	60.7	51.4
	65.8	59.2	63.9	58.1	34.4	34.4	28.8	28.8		
2000	64.8	6.9	12.0	3.4	3.5	8.0	0.4	1.1	60.5	51.3
	65.5	58.8	63.9	58.1	34.4	34.4	28.8	28.8		
2001	65.2	6.8	12.2	3.5	3.4	7.7	0.4	0.9	60.4	51.6
	65.1	58.5	63.9	58.1	34.4	34.4	28.8	28.8		
2002	65.4	7.1	11.6	3.5	3.3	7.6	0.5	1.0	60.2	51.3
	64.8	58.2	63.9	58.1	34.4	34.4	28.8	28.8		
2003	64.6	7.4	12.1	3.6	3.1	7.5	0.4	1.3	59.9	51.5
	64.5	57.9	63.9	58.1	34.4	34.4	28.8	28.8		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	46.3	46.3	46.0	46.0	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	70.0	90.0	70.0	80.0	80.0	70.0	70.0	1.0	
Unempl.insur.	69.2	23.1	61.5	23.1	69.2	69.2	23.1	23.1	1.0	
Sick leave	93.8	93.8	93.8	93.8	93.8	93.8	93.8	93.8	1.0	
Matern.leave	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	1.0	
Paid holidays	75.0	75.0	75.0	75.0	12.5	12.5	12.5	12.5	1.0	
Weighted sum	64.5	57.9	63.9	58.1	34.4	34.4	28.8	28.8	1.0	

Figure 5.7: Employment types in Finland versus employment security and fringe benefits (Source: EuroStat and own estimation)

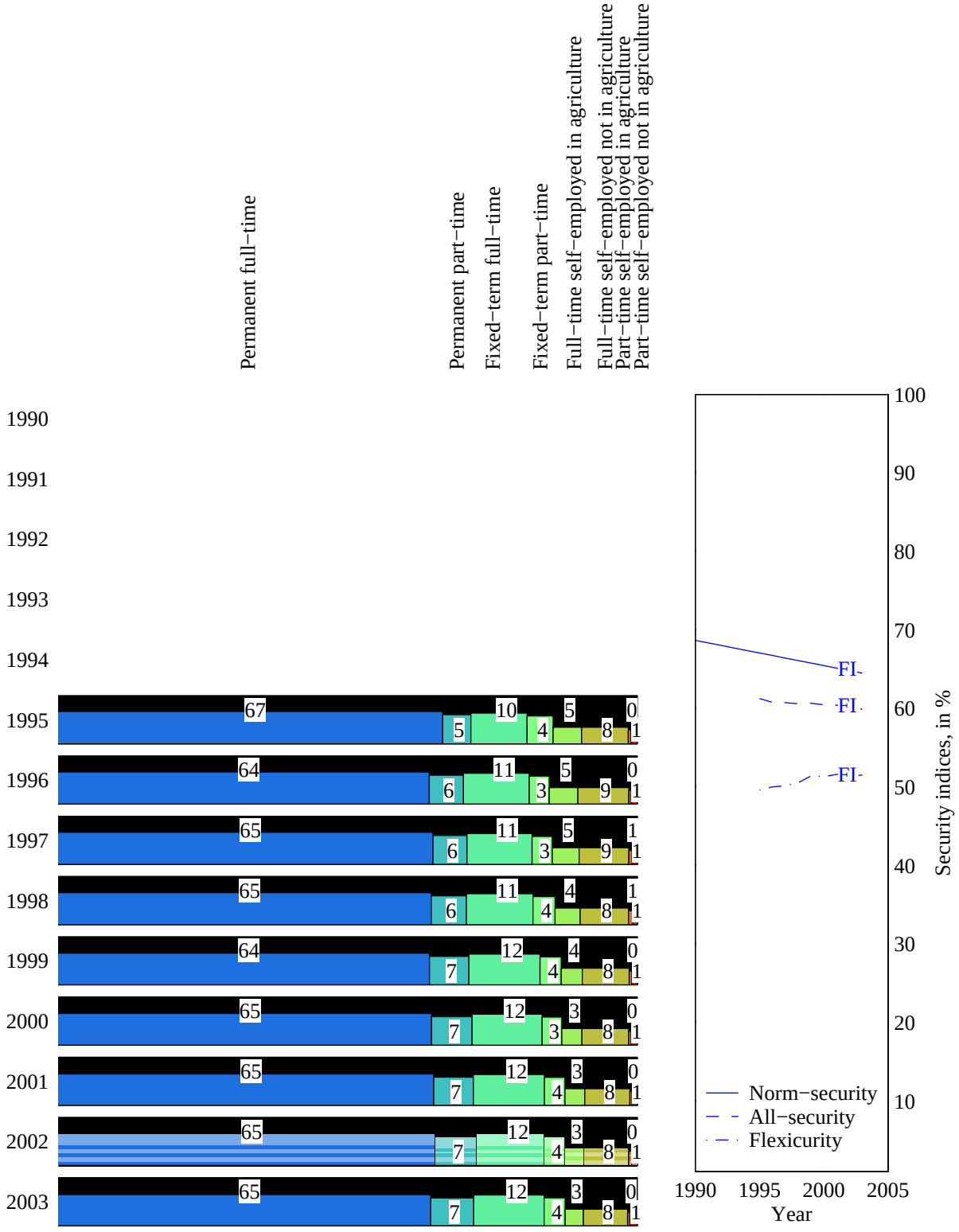

Table 5.8: Employment types in France and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	69.2	8.3	7.0	2.1	3.6	8.9	0.3	0.5	54.2	40.4
	60.3	56.7	61.7	60.5	18.5	14.7	18.5	14.7		
1991	69.8	8.4	6.6	2.2	3.4	8.8	0.3	0.5	54.4	40.6
	60.3	56.7	62.0	60.8	18.5	14.7	18.5	14.7		
1992	69.3	8.6	6.5	2.5	3.3	8.9	0.3	0.5	54.4	40.9
	60.3	56.7	62.3	61.0	18.5	14.7	18.5	14.7		
1993	68.9	9.4	6.3	3.1	2.9	8.5	0.3	0.5	54.7	42.3
	60.3	56.7	62.6	61.3	18.5	14.7	18.5	14.7		
1994	68.0	10.3	6.3	3.2	2.7	8.6	0.3	0.5	54.7	42.8
	60.3	56.7	62.8	61.6	18.5	14.7	18.5	14.7		
1995	66.7	10.6	7.1	3.6	2.6	8.5	0.2	0.6	54.9	43.9
	60.3	56.7	63.1	61.8	18.5	14.7	18.5	14.7		
1996	66.5	10.8	7.2	3.9	2.5	8.3	0.2	0.6	55.0	44.5
	60.3	56.7	63.4	62.1	18.5	14.7	18.5	14.7		
1997	65.5	11.5	7.5	4.0	2.4	8.2	0.2	0.6	55.1	45.2
	60.3	56.7	63.6	62.4	18.5	14.7	18.5	14.7		
1998	64.6	11.9	8.2	4.1	2.3	8.0	0.2	0.6	55.3	46.1
	60.3	56.7	63.9	62.6	18.5	14.7	18.5	14.7		
1999	64.5	12.2	8.5	3.9	2.2	7.9	0.2	0.6	55.4	46.6
	60.3	56.7	64.2	62.9	18.5	14.7	18.5	14.7		
2000	64.0	11.9	9.9	4.0	2.1	7.5	0.2	0.6	55.8	47.7
	60.3	56.7	64.4	63.2	18.5	14.7	18.5	14.7		
2001	64.8	11.8	9.8	3.5	2.1	7.2	0.2	0.5	56.0	48.0
	60.3	56.7	64.7	63.4	18.5	14.7	18.5	14.7		
2002	65.8	11.7	9.2	3.5	2.1	7.0	0.2	0.5	56.1	47.9
	60.3	56.7	65.0	63.7	18.5	14.7	18.5	14.7		
2003	66.2	12.2	7.8	3.5	2.6	7.1	0.2	0.5	55.8	46.9
	60.3	56.7	65.2	64.0	18.5	14.7	18.5	14.7		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	47.1	47.1	62.6	62.6	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	70.0	70.0	70.0	70.0	1.0	
Unempl.insur.	92.3	92.3	84.6	84.6	7.7	7.7	7.7	7.7	1.0	
Sick leave	56.3	31.3	43.8	31.3	6.3	12.5	6.3	12.5	1.0	
Matern.leave	66.7	55.6	55.6	55.6	88.9	44.4	88.9	44.4	1.0	
Paid holidays	62.5	62.5	62.5	62.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	60.3	56.7	65.2	64.0	18.5	14.7	18.5	14.7	1.0	

Figure 5.8: Employment types in France versus employment security and fringe benefits (Source: EuroStat and own estimation)

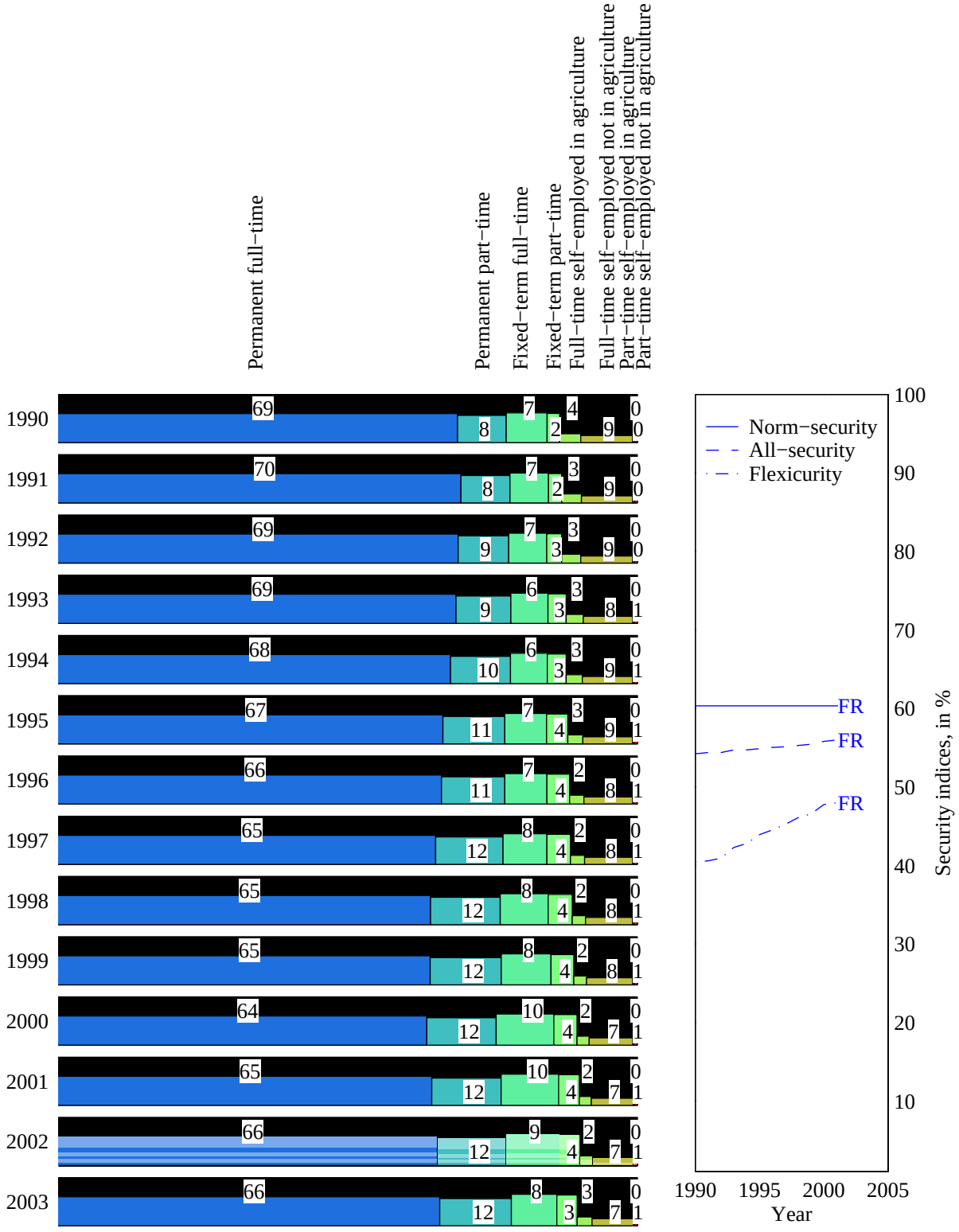

Table 5.9: Employment types in Italy and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	69.1	1.7	2.1	1.8	4.1	20.1	0.4	0.7	61.3	28.2
	76.1	75.1	84.9	84.9	16.4	16.4	15.4	15.4		
1991	68.7	1.9	2.1	1.9	3.9	20.2	0.5	0.8	61.3	28.6
	76.1	75.1	84.0	84.0	16.4	16.4	15.4	15.4		
1992	66.8	2.5	4.0	1.6	3.7	20.1	0.3	1.0	61.5	32.0
	76.1	75.1	83.1	83.1	16.4	16.4	15.4	15.4		
1993	68.0	2.5	3.2	1.3	3.6	20.3	0.3	1.0	61.4	30.1
	76.1	75.1	82.3	82.3	16.4	16.4	15.4	15.4		
1994	66.4	2.9	3.9	1.5	3.4	20.5	0.3	1.0	61.3	31.9
	76.1	75.1	81.4	81.4	16.4	16.4	15.4	15.4		
1995	66.0	3.0	3.8	1.5	3.3	20.9	0.3	1.2	61.0	31.7
	76.1	75.1	80.6	80.6	16.4	16.4	15.4	15.4		
1996	65.4	3.2	3.9	1.6	3.3	21.1	0.2	1.2	60.8	32.0
	76.1	75.1	79.7	79.7	16.4	16.4	15.4	15.4		
1997	64.9	3.4	4.3	1.8	3.2	20.8	0.3	1.3	61.0	32.9
	76.1	75.1	78.9	78.9	16.4	16.4	15.4	15.4		
1998	64.6	3.5	4.2	2.1	2.7	21.4	0.2	1.2	61.0	33.3
	76.1	75.1	78.0	78.0	16.4	16.4	15.4	15.4		
1999	63.5	3.8	5.0	2.3	2.6	21.3	0.2	1.3	61.0	34.6
	76.1	75.1	77.2	77.2	16.4	16.4	15.4	15.4		
2000	62.9	4.3	5.0	2.6	2.3	21.2	0.2	1.4	61.0	35.4
	76.1	75.1	76.3	76.3	16.4	16.4	15.4	15.4		
2001	63.2	4.9	4.9	2.3	2.3	20.9	0.2	1.3	61.2	35.7
	76.1	75.1	75.4	75.4	16.4	16.4	15.4	15.4		
2002	63.4	4.8	5.3	2.2	2.2	20.7	0.2	1.3	61.4	35.9
	76.1	75.1	74.6	74.6	16.4	16.4	15.4	15.4		
2003	63.7	4.8	5.0	2.2	2.1	20.8	0.2	1.2	61.4	35.6
	76.1	75.1	73.7	73.7	16.4	16.4	15.4	15.4		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	73.9	73.9	79.4	79.4	0.0	0.0	0.0	0.0	5.0	
Pension	60.0	50.0	40.0	40.0	60.0	60.0	50.0	50.0	1.0	
Unempl.insur.	61.5	61.5	38.5	38.5	7.7	7.7	7.7	7.7	1.0	
Sick leave	93.8	93.8	93.8	93.8	6.3	6.3	6.3	6.3	1.0	
Matern.leave	88.9	88.9	88.9	88.9	77.8	77.8	77.8	77.8	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	76.1	75.1	73.7	73.7	16.4	16.4	15.4	15.4	1.0	

Figure 5.9: Employment types in Italy versus employment security and fringe benefits (Source: EuroStat and own estimation)

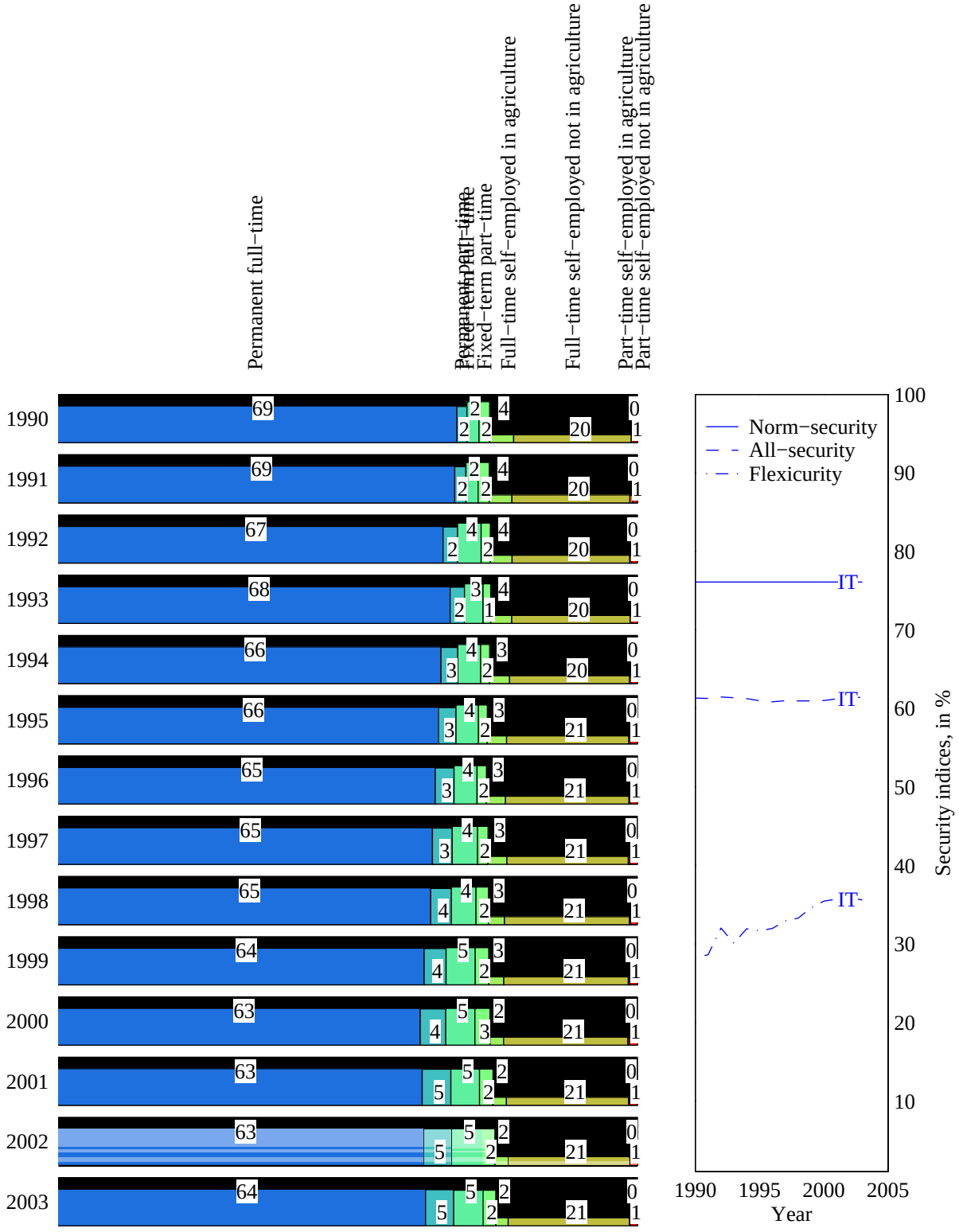

Table 5.10: Employment types in Netherlands and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	58.8	24.0	3.3	3.5	1.9	5.0	0.3	3.2	69.2	60.6
	75.3	75.3	70.1	70.1	20.5	20.5	20.5	20.5		
1991	58.2	25.1	3.2	3.7	1.8	4.9	0.3	2.8	69.5	61.5
	75.3	75.3	69.5	69.5	20.5	20.5	20.5	20.5		
1992	56.9	24.8	2.6	6.1	1.7	5.0	0.3	2.5	69.5	61.9
	75.3	75.3	68.8	68.8	20.5	20.5	20.5	20.5		
1993	56.2	24.8	2.5	6.5	1.7	5.2	0.4	2.7	69.2	61.3
	75.3	75.3	68.2	68.2	20.5	20.5	20.5	20.5		
1994	54.1	25.4	2.8	6.9	1.6	5.6	0.4	3.1	68.7	60.8
	75.3	75.3	67.6	67.6	20.5	20.5	20.5	20.5		
1995	52.5	26.7	3.2	6.5	1.6	5.9	0.4	3.2	68.4	60.8
	75.3	75.3	66.9	66.9	20.5	20.5	20.5	20.5		
1996	51.6	27.3	3.5	7.2	1.5	5.9	0.4	2.5	68.6	61.5
	75.3	75.3	66.3	66.3	20.5	20.5	20.5	20.5		
1997	52.0	27.5	3.3	6.9	1.5	5.9	0.4	2.5	68.7	61.5
	75.3	75.3	65.6	65.6	20.5	20.5	20.5	20.5		
1998	51.5	27.3	3.4	8.1	1.3	5.7	0.4	2.3	68.8	61.9
	75.3	75.3	65.0	65.0	20.5	20.5	20.5	20.5		
1999	51.3	28.3	3.0	7.9	1.3	5.7	0.3	2.3	68.8	62.1
	75.3	75.3	64.4	64.4	20.5	20.5	20.5	20.5		
2000	48.3	29.7	4.4	8.3	1.1	5.4	0.3	2.6	68.7	62.5
	75.3	75.3	63.7	63.7	20.5	20.5	20.5	20.5		
2001	46.9	30.3	4.6	8.3	1.0	5.9	0.3	2.7	68.3	62.1
	75.3	75.3	63.1	63.1	20.5	20.5	20.5	20.5		
2002	45.9	31.5	4.6	8.4	1.0	5.3	0.3	3.0	68.3	62.4
	75.3	75.3	62.4	62.4	20.5	20.5	20.5	20.5		
2003	75.3	75.3	61.8	61.8	20.5	20.5	20.5	20.5		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	63.2	63.2	39.0	39.0	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	1.0	
Unempl.insur.	76.9	76.9	69.2	69.2	7.7	7.7	7.7	7.7	1.0	
Sick leave	93.8	93.8	93.8	93.8	6.3	6.3	6.3	6.3	1.0	
Matern.leave	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	75.3	75.3	61.8	61.8	20.5	20.5	20.5	20.5	1.0	

Figure 5.10: Employment types in Netherlands versus employment security and fringe benefits (Source: EuroStat and own estimation)

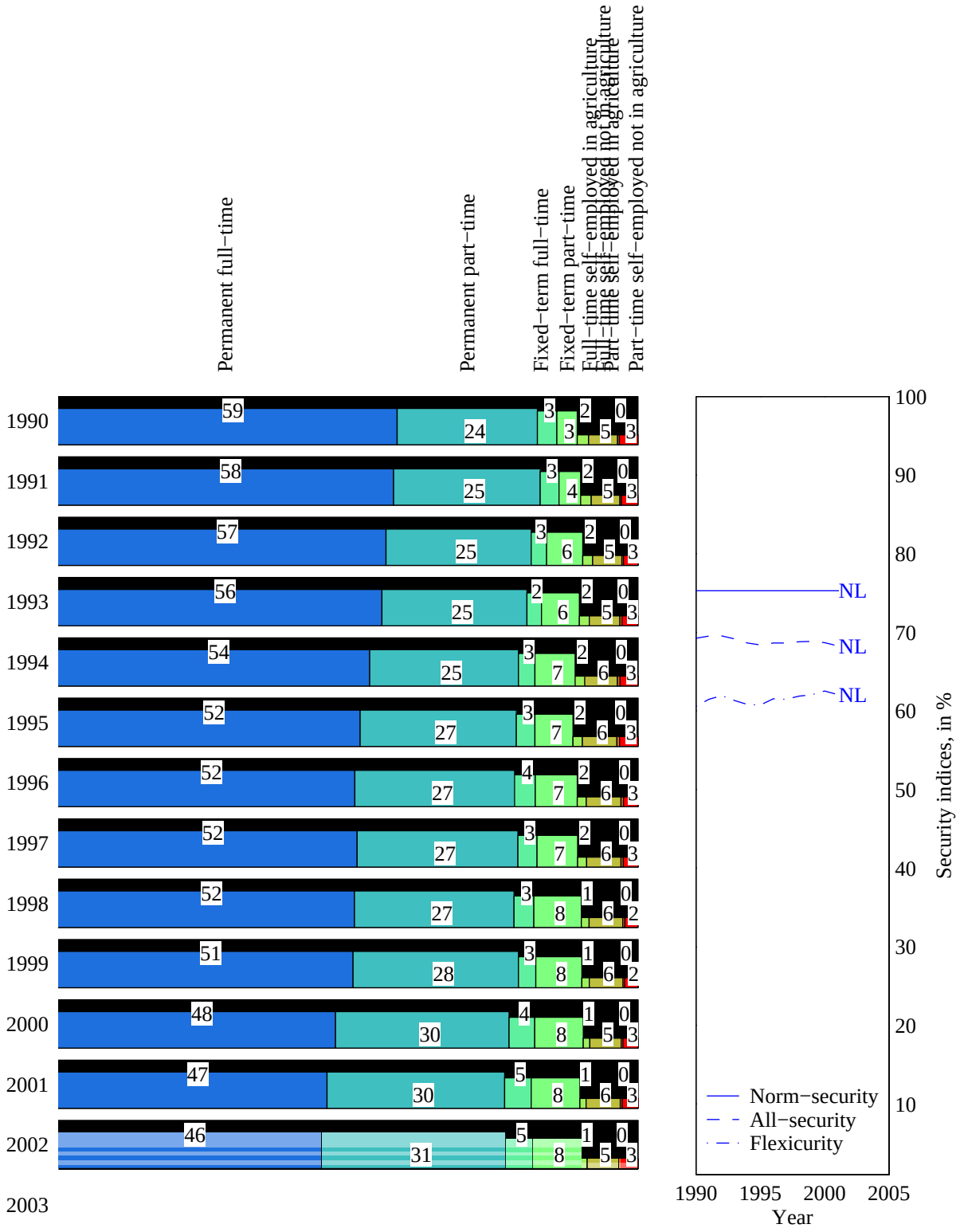

Table 5.11: Employment types in Norway and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	68.6	67.1	74.1	72.6	27.4	27.4	27.4	27.4		
1991	68.6	67.1	73.7	72.2	27.4	27.4	27.4	27.4		
1992	68.6	67.1	73.4	71.8	27.4	27.4	27.4	27.4		
1993	68.6	67.1	73.0	71.5	27.4	27.4	27.4	27.4		
1994	68.6	67.1	72.6	71.1	27.4	27.4	27.4	27.4		
1995	58.3	19.7	6.4	5.5	2.8	5.2	0.6	1.5	64.5	58.7
	68.6	67.1	72.3	70.7	27.4	27.4	27.4	27.4		
1996	60.7	19.3	6.9	5.3	2.3	3.8	0.5	1.3	65.4	60.4
	68.6	67.1	71.9	70.3	27.4	27.4	27.4	27.4		
1997	60.7	20.3	6.2	4.9	2.3	3.8	0.5	1.3	65.3	60.2
	68.6	67.1	71.5	70.0	27.4	27.4	27.4	27.4		
1998	62.3	20.1	5.4	4.5	2.2	3.8	0.5	1.2	65.3	59.8
	68.6	67.1	71.1	69.6	27.4	27.4	27.4	27.4		
1999	62.8	20.1	5.1	4.7	2.2	3.6	0.4	1.1	65.4	60.1
	68.6	67.1	70.8	69.2	27.4	27.4	27.4	27.4		
2000	63.5	20.4	5.0	4.0	2.0	3.6	0.5	1.1	65.5	60.0
	68.6	67.1	70.4	68.8	27.4	27.4	27.4	27.4		
2001	64.3	20.4	4.7	3.7	1.8	3.5	0.3	1.2	65.5	60.0
	68.6	67.1	70.0	68.5	27.4	27.4	27.4	27.4		
2002	63.4	20.2	5.1	4.3	1.9	3.6	0.3	1.1	65.5	60.0
	68.6	67.1	69.6	68.1	27.4	27.4	27.4	27.4		
2003	61.8	22.3	4.2	4.6	1.6	3.6	0.4	1.4	65.4	60.1
	68.6	67.1	69.3	67.7	27.4	27.4	27.4	27.4		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	55.7	55.7	57.7	57.7	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	1.0	
Unempl.insur.	53.8	38.5	53.8	38.5	7.7	7.7	7.7	7.7	1.0	
Sick leave	87.5	87.5	87.5	87.5	75.0	75.0	75.0	75.0	1.0	
Matern.leave	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	68.6	67.1	69.3	67.7	27.4	27.4	27.4	27.4	1.0	

Figure 5.11: Employment types in Norway versus employment security and fringe benefits (Source: EuroStat and own estimation)

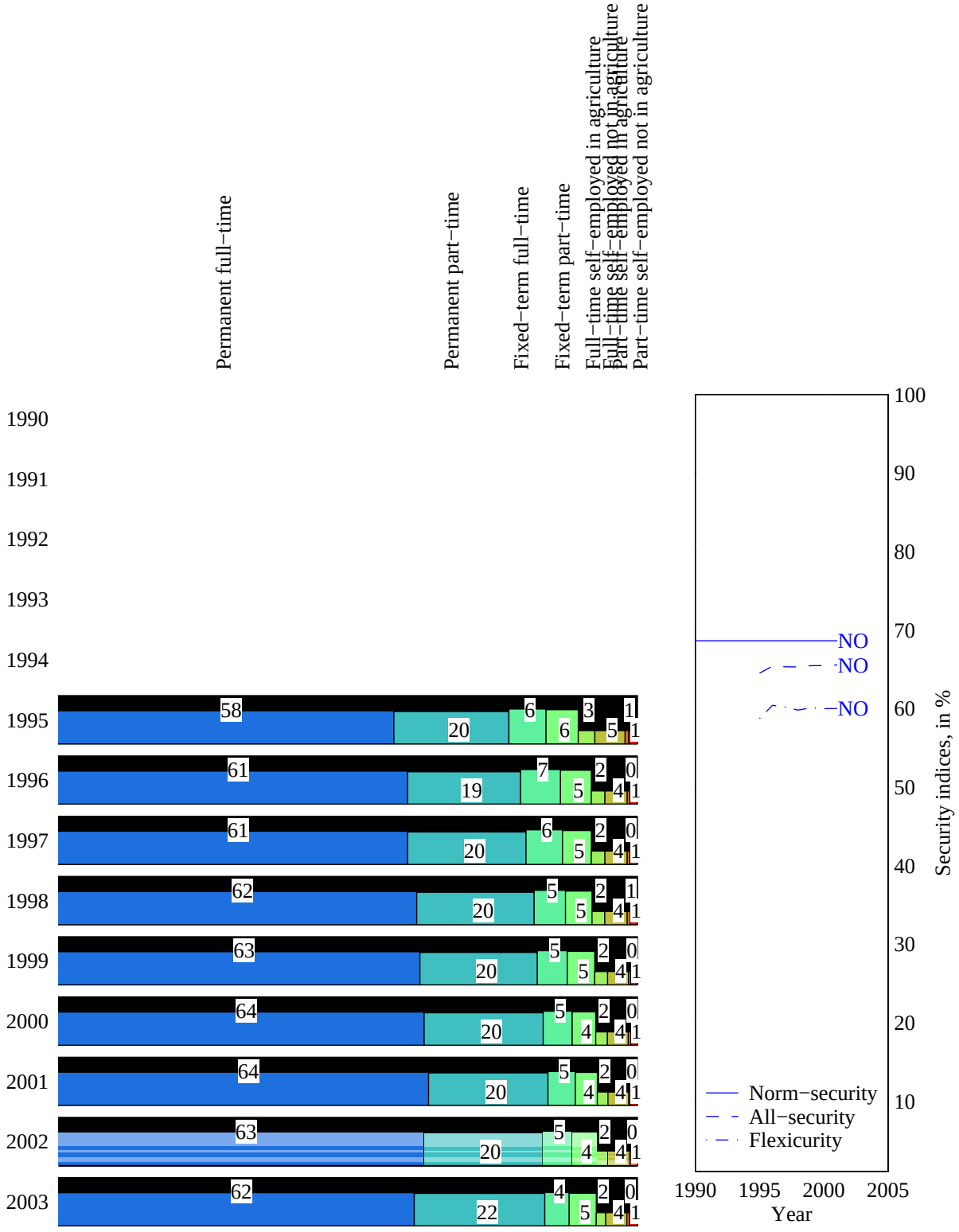

Table 5.12: Employment types in Poland and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1991	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1992	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1993	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1994	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1995	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1996	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1997	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1998	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
1999	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
2000	68.1	3.8	2.9	1.5	11.0	9.2	2.3	1.2	54.8	30.4
	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
2001	64.0	3.2	6.7	2.4	12.0	9.2	1.8	0.8	54.3	33.1
	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
2002	61.2	3.1	9.2	2.6	11.7	9.4	2.1	0.7	54.0	34.7
	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
2003	59.5	3.0	11.9	2.7	10.5	9.7	2.0	0.7	54.2	36.5
	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	65.3	65.3	52.5	52.5	0.0	0.0	0.0	0.0	5.0	
Pension	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	1.0	
Unempl.insur.	61.5	30.8	38.5	30.8	46.2	46.2	46.2	46.2	1.0	
Sick leave	81.3	81.3	81.3	81.3	50.0	50.0	50.0	50.0	1.0	
Matern.leave	55.6	55.6	44.4	44.4	44.4	44.4	44.4	44.4	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	66.2	63.2	56.4	55.6	20.3	20.3	20.3	20.3	1.0	

Figure 5.12: Employment types in Poland versus employment security and fringe benefits (Source: EuroStat and own estimation)

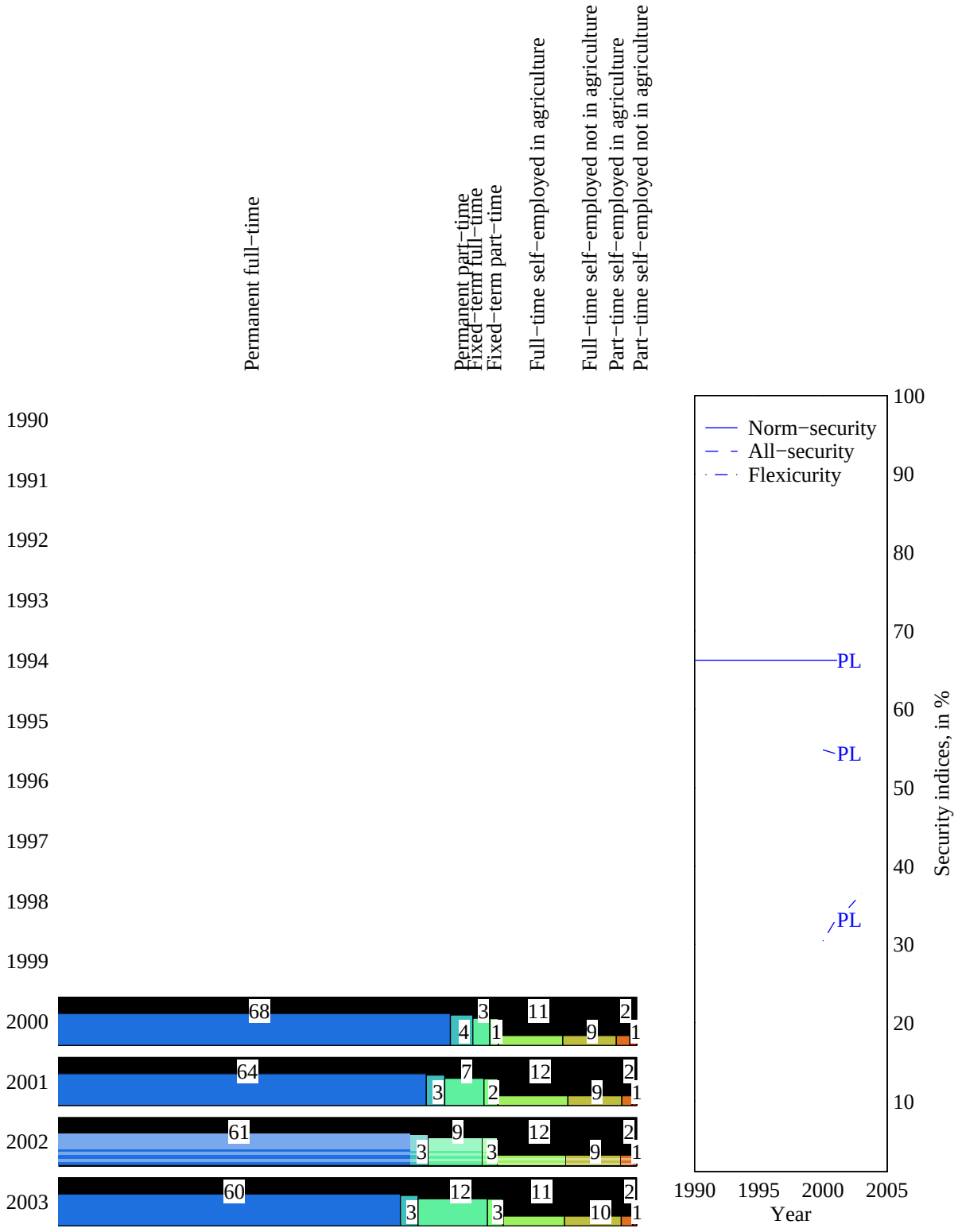

Table 5.13: Employment types in Portugal and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	58.1	1.7	12.4	1.1	11.2	12.7	1.8	1.0	51.6	27.5
	69.0	63.4	56.2	54.2	11.3	11.3	6.6	6.6		
1991	58.9	1.7	10.9	1.0	10.3	13.6	2.3	1.3	51.1	25.9
	68.7	63.2	56.0	54.0	11.3	11.3	6.6	6.6		
1992	64.5	2.6	7.8	0.5	6.9	14.0	1.6	2.1	53.0	24.9
	68.4	62.9	55.8	53.8	11.3	11.3	6.6	6.6		
1993	65.2	2.6	7.0	0.4	6.7	14.2	1.9	2.0	52.8	23.9
	68.2	62.6	55.6	53.6	11.3	11.3	6.6	6.6		
1994	64.4	2.6	6.5	0.4	6.8	14.9	2.2	2.1	51.9	23.0
	67.9	62.3	55.4	53.4	11.3	11.3	6.6	6.6		
1995	63.5	2.6	6.8	0.5	7.0	15.6	2.1	1.8	51.4	23.1
	67.6	62.1	55.2	53.2	11.3	11.3	6.6	6.6		
1996	62.0	2.7	7.1	0.6	6.9	15.7	2.8	2.2	50.5	23.0
	67.4	61.8	55.0	53.0	11.3	11.3	6.6	6.6		
1997	60.4	3.0	8.2	0.6	7.1	14.8	3.8	2.1	50.0	24.1
	67.1	61.5	54.7	52.7	11.3	11.3	6.6	6.6		
1998	58.0	2.7	11.5	1.3	6.1	14.3	4.1	2.0	50.1	26.9
	66.8	61.3	54.5	52.5	11.3	11.3	6.6	6.6		
1999	58.2	2.4	12.1	1.6	5.5	14.0	4.3	1.9	50.2	27.5
	66.5	61.0	54.3	52.3	11.3	11.3	6.6	6.6		
2000	58.3	2.1	13.2	1.8	4.9	13.9	4.2	1.6	50.5	28.5
	66.3	60.7	54.1	52.1	11.3	11.3	6.6	6.6		
2001	57.4	1.7	13.0	1.9	5.0	14.2	4.8	2.0	49.5	27.2
	66.0	60.5	53.9	51.9	11.3	11.3	6.6	6.6		
2002	56.1	1.8	14.3	1.9	4.8	14.1	5.0	2.0	49.2	28.1
	65.7	60.2	53.7	51.7	11.3	11.3	6.6	6.6		
2003	56.2	2.2	13.7	1.9	5.1	13.8	5.2	2.0	49.0	27.9
	65.5	59.9	53.5	51.5	11.3	11.3	6.6	6.6		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	83.0	83.0	69.4	69.4	0.0	0.0	0.0	0.0	5.0	
Pension	50.0	10.0	30.0	10.0	50.0	50.0	10.0	10.0	1.0	
Unempl.insur.	30.8	15.4	15.4	15.4	7.7	7.7	7.7	7.7	1.0	
Sick leave	43.8	43.8	37.5	37.5	31.3	31.3	25.0	25.0	1.0	
Matern.leave	55.6	55.6	44.4	44.4	11.1	11.1	11.1	11.1	1.0	
Paid holidays	62.5	62.5	62.5	62.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	65.5	59.9	53.5	51.5	11.3	11.3	6.6	6.6	1.0	

Figure 5.13: Employment types in Portugal versus employment security and fringe benefits (Source: EuroStat and own estimation)

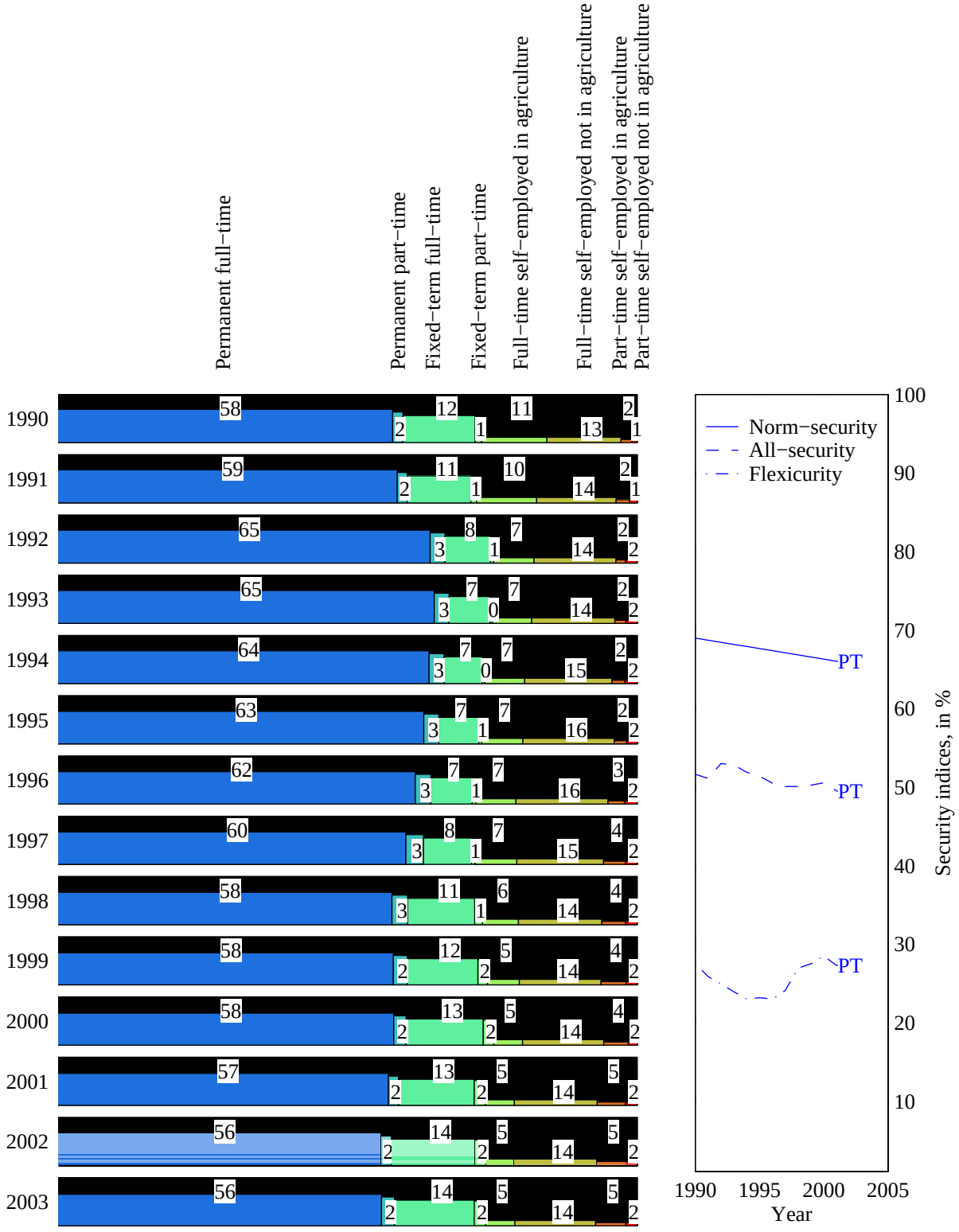

Table 5.14: Employment types in Sweden and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	82.8	82.8	88.4	88.4	33.3	33.3	33.3	33.3		
1991	82.8	82.8	87.1	87.1	33.3	33.3	33.3	33.3		
1992	82.8	82.8	85.7	85.7	33.3	33.3	33.3	33.3		
1993	82.8	82.8	84.4	84.4	33.3	33.3	33.3	33.3		
1994	82.8	82.8	83.1	83.1	33.3	33.3	33.3	33.3		
1995	58.3	18.3	6.1	5.5	1.6	8.0	0.4	1.8	76.8	68.4
	82.8	82.8	81.7	81.7	33.3	33.3	33.3	33.3		
1996	60.4	17.4	5.2	5.3	1.6	8.3	0.3	1.4	76.8	67.6
	82.8	82.8	80.4	80.4	33.3	33.3	33.3	33.3		
1997	61.2	16.8	5.1	5.6	1.5	7.8	0.3	1.5	76.8	67.4
	82.8	82.8	79.0	79.0	33.3	33.3	33.3	33.3		
1998	61.4	16.2	5.8	5.7	1.6	7.6	0.3	1.5	76.8	67.2
	82.8	82.8	77.7	77.7	33.3	33.3	33.3	33.3		
1999	60.7	15.9	6.2	6.3	1.6	7.8	0.3	1.2	76.6	67.1
	82.8	82.8	76.4	76.4	33.3	33.3	33.3	33.3		
2000	62.1	14.3	7.0	6.0	1.2	7.2	0.6	1.8	76.5	66.2
	82.8	82.8	75.0	75.0	33.3	33.3	33.3	33.3		
2001	63.0	12.5	8.0	6.1	1.2	7.0	0.3	1.8	76.4	65.5
	82.8	82.8	73.7	73.7	33.3	33.3	33.3	33.3		
2002	63.0	12.6	7.7	6.3	1.1	7.1	0.4	1.8	76.2	64.9
	82.8	82.8	72.3	72.3	33.3	33.3	33.3	33.3		
2003	61.8	14.1	7.3	6.9	1.1	7.0	0.4	1.5	76.2	65.5
	82.8	82.8	71.0	71.0	33.3	33.3	33.3	33.3		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	78.2	78.2	57.3	57.3	0.0	0.0	0.0	0.0	5.0	
Pension	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	1.0	
Unempl.insur.	76.9	76.9	76.9	76.9	53.8	53.8	53.8	53.8	1.0	
Sick leave	93.8	93.8	93.8	93.8	87.5	87.5	87.5	87.5	1.0	
Matern.leave	88.9	88.9	88.9	88.9	88.9	88.9	88.9	88.9	1.0	
Paid holidays	87.5	87.5	87.5	87.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	82.8	82.8	71.0	71.0	33.3	33.3	33.3	33.3	1.0	

Figure 5.14: Employment types in Sweden versus employment security and fringe benefits (Source: EuroStat and own estimation)

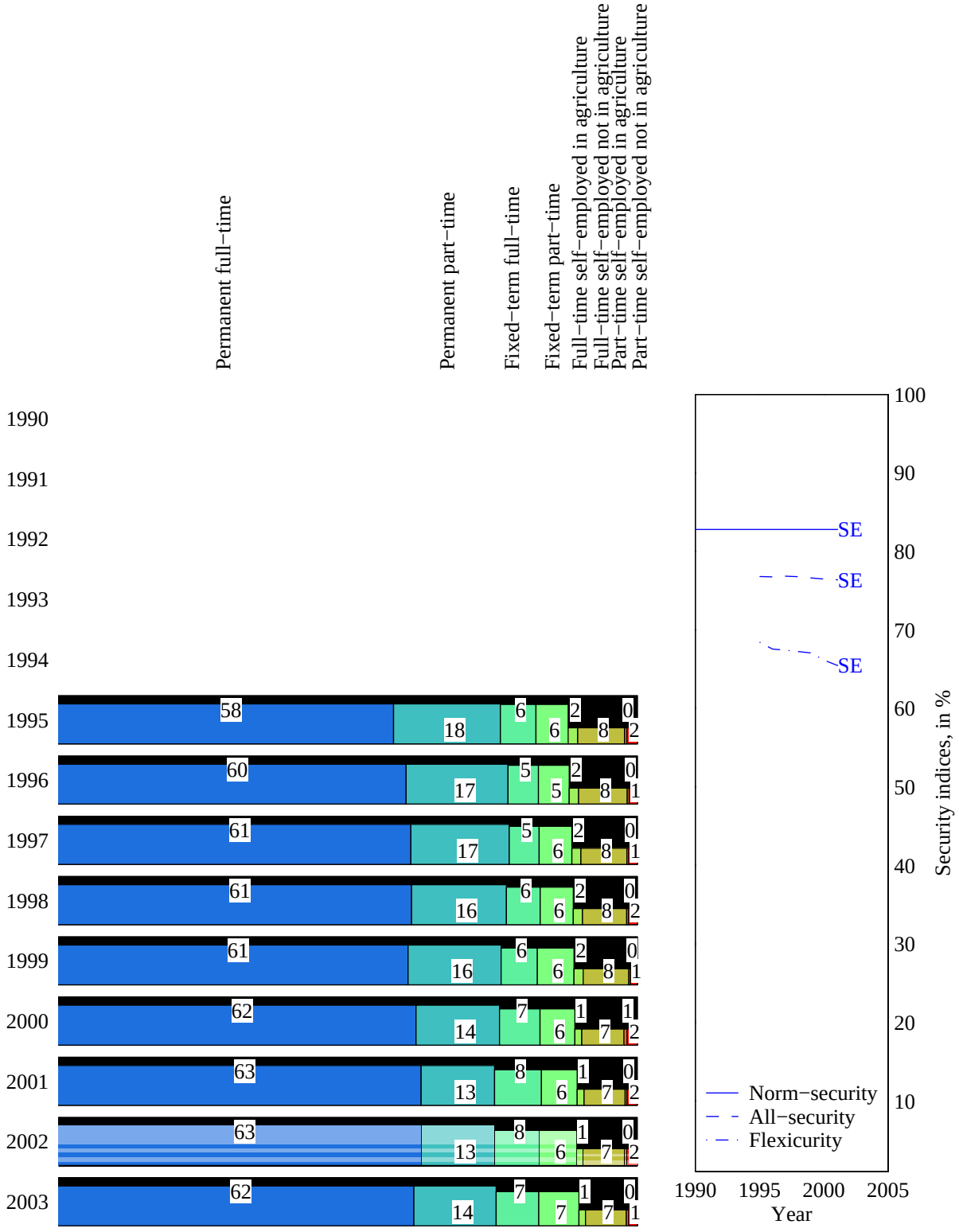

Table 5.15: Employment types in United Kingdom and their level of employment security and of social security (Source: EuroStat and own estimation)

Year	Employment type, in % to total employment/Score of its security, in %								Indices	
	Permanent full-time	Permanent part-time	Fixed-term full-time	Fixed-term part-time	Full-time self-employed in agriculture	Full-time self-employed not in agriculture	Part-time self-employed in agriculture	Part-time self-employed not in agriculture	All-Security	Flexicurity
	%	%	%	%	%	%	%	%	%	%
1990	65.2	16.7	1.7	2.8	1.0	10.4	0.2	2.0	42.0	32.9
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1991	65.0	17.2	1.6	3.0	1.1	10.1	0.1	1.9	42.0	33.1
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1992	64.1	18.2	2.5	2.3	1.0	9.7	0.2	2.0	42.0	33.5
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1993	63.5	18.5	2.7	2.4	0.9	9.6	0.2	2.2	42.0	33.6
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1994	62.6	18.6	3.0	2.6	0.9	9.8	0.1	2.3	41.9	33.6
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1995	62.2	18.5	3.3	2.8	0.9	9.9	0.1	2.3	41.8	33.6
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1996	61.9	19.1	3.3	2.8	0.9	9.5	0.1	2.4	41.9	33.8
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1997	61.8	19.0	3.4	3.0	0.8	9.3	0.1	2.5	41.9	33.9
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1998	62.4	19.1	3.3	2.8	0.7	8.9	0.1	2.6	42.0	34.0
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
1999	62.9	19.3	3.2	2.8	0.7	8.7	0.1	2.5	42.1	34.1
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
2000	63.2	19.3	3.2	2.8	0.6	8.4	0.1	2.4	42.2	34.2
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
2001	63.2	19.5	3.2	2.7	0.6	8.5	0.1	2.3	42.2	34.3
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
2002	63.4	19.7	2.9	2.5	0.5	8.5	0.1	2.5	42.2	34.1
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
2003	62.8	20.0	2.7	2.4	0.5	8.7	0.1	2.8	42.0	34.0
	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9		
Composition of the security score, in %, for each employment category in 2002									Criterion weight	
Empl.security	39.6	39.6	34.3	34.3	0.0	0.0	0.0	0.0	5.0	
Pension	70.0	60.0	70.0	60.0	70.0	70.0	60.0	60.0	1.0	
Unempl.insur.	38.5	30.8	38.5	30.8	7.7	7.7	7.7	7.7	1.0	
Sick leave	68.8	31.3	62.5	31.3	56.3	56.3	50.0	50.0	1.0	
Matern.leave	55.6	33.3	44.4	33.3	88.9	88.9	88.9	88.9	1.0	
Paid holidays	37.5	37.5	37.5	37.5	12.5	12.5	12.5	12.5	1.0	
Weighted sum	46.8	39.1	42.4	36.4	23.5	23.5	21.9	21.9	1.0	

Figure 5.15: Employment types in United Kingdom versus employment security and fringe benefits (Source: EuroStat and own estimation)